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From the Editor's Desk

Lots of variety in this issue. Peter Rochfort, who used to trade as Foxfire Orchids, has put up some theories on why some complex hybrid Cymbidiums produce deformed flowers, whilst others don't. He discusses the various breeding lines he has had under production and shows examples of specific cultivars.

The Orchid Pot Company from Port Macquarie NSW continues to be loyal advertisers of the *AOR* over many decades. They are one of few ornamental and commercial pot companies internationally that have designed specialised pots designed for orchid growers and their plants. They produce sturdy, long-lasting black plastic pots with ample drainage to suit most popular orchid genera. The have just released two new innovative Australian made products for orchid and plant growers. A 200mm *Stanhopea* pot with multiple square slots plus the Orchid Pot Stand 250 that is adjustable and designed for Port Pots from 80mm to 200mm diameter, to stop top heavy or unstable plants from falling over.

Scott Barrie talks about the colour possibilities with the latest *Sarcochilus* hybrids. The examples from the same seed capsule also emphasise the huge variation in colours one can expect from some of the more complex hybrids. One flask could provide you with an instant and varied collection. Justin Priddy also shares some photos of the pollinator of the *Sarcochilus* relative, *Peristeranthus hillii*.

The **21st Australian Orchid Council Conference & Show** 'Orchids in the Foothills' is being hosted by the Orchid Society of New South Wales from **18-22 July 2018**. It will be set at the foot of Sydney's famous Blue Mountains in South Windsor. The venue for the conference is the Hawkesbury Indoor Stadium, South Windsor, NSW Australia. Just an hour's drive from the venue are the Three Sisters, Jamison Valley, the beautiful Wentworth Falls and the lovely shopping experience of Leura Village. Enjoy a trip on the famous Skyway or the Scenic Railway. These and many more local attractions are close by for you to visit during the Conference and Show. Beautiful orchid displays will be put on by affiliated societies, individuals and international guests. Vendors both local, Australia wide and international will be selling their orchids. The world's first blue *Phalaenopsis* Wedding Parade will be on display under 24 hour security in a plexiglass box. It has never been seen in Australia, and never allowed outside Japan before. The orchid flowers are about 5cm across, and nearly 30 flowers on each plant. It was developed by Dr. Masahiro Mii, Dr Chin and researchers at Chiba University, Japan. For more information visit **www.aocc2018.orchidsocietynsw.com.au**

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Cover Shot

***Bulbophyllum* Elizabeth Ann 'Buckleberry'** FCC/AOS is a very popular and easily grown primary hybrid between *Bulbophyllum longissimum* and *Bulbophyllum rothschildianum*. Plant and photo: Hills District Orchids / DPB

Some Observations on Flower Deformities in *Cymbidiums*

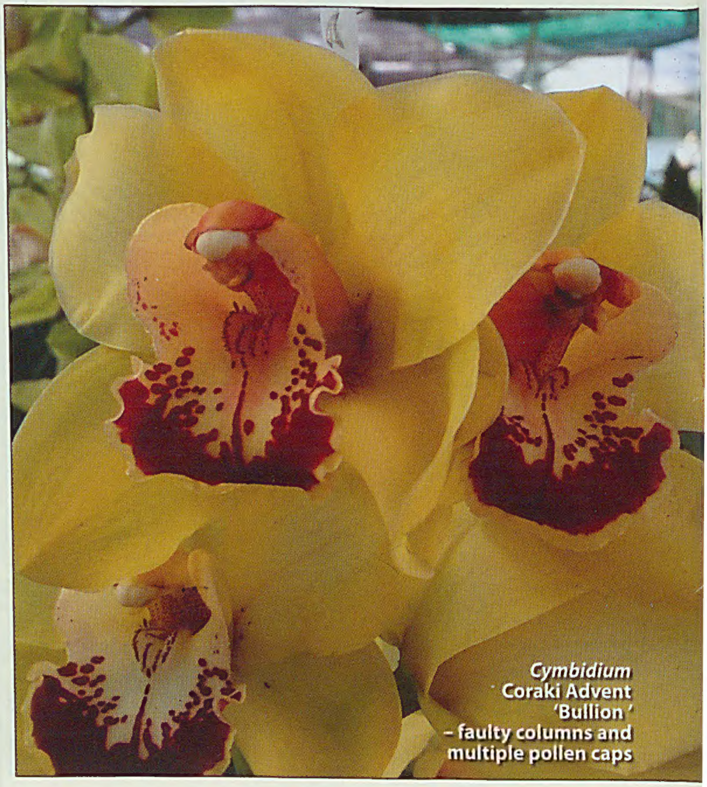
Text and photos by Peter Rochfort

One of the greatest disappointments for show growers is to look forward to **that** particular spike, which is showing so much promise and show bench potential, only to find that when the flowers open there are one or more flowers with deformities. For show growers it is a year and an opportunity lost to win that elusive prize.

Deformities can manifest in a variety of ways. Amongst these are petals caught up in the labellum, multiple pollen caps, petals fused to the labellum, missing labellums, missing segments, multiple labellums, pedicles fused to the flower stem and spike deformities. I began to wonder whether there was a genetic factor for this scourge which seems to affect a considerable proportion of modern show bench Cymbidiums. Some varieties would deform one year and not the next, only to deform in following years. This is possibly a response to temperature but none the less the genes for deformation seem to be present in the varieties that show this response. Could it be brought on by cultural factors such as temperature or imbalance of fertilisers or light? I suspected that in some instances cultural factors may contribute to the problem but my gut feeling was that it was a genetic problem. The logical place to begin was to look at the varieties which I had owned at one time or another and which regularly carried flower deformities. By doing this I hoped to discover a common cause of the problem/s. Were the various deformities caused by one genetic factor or multiple factors?

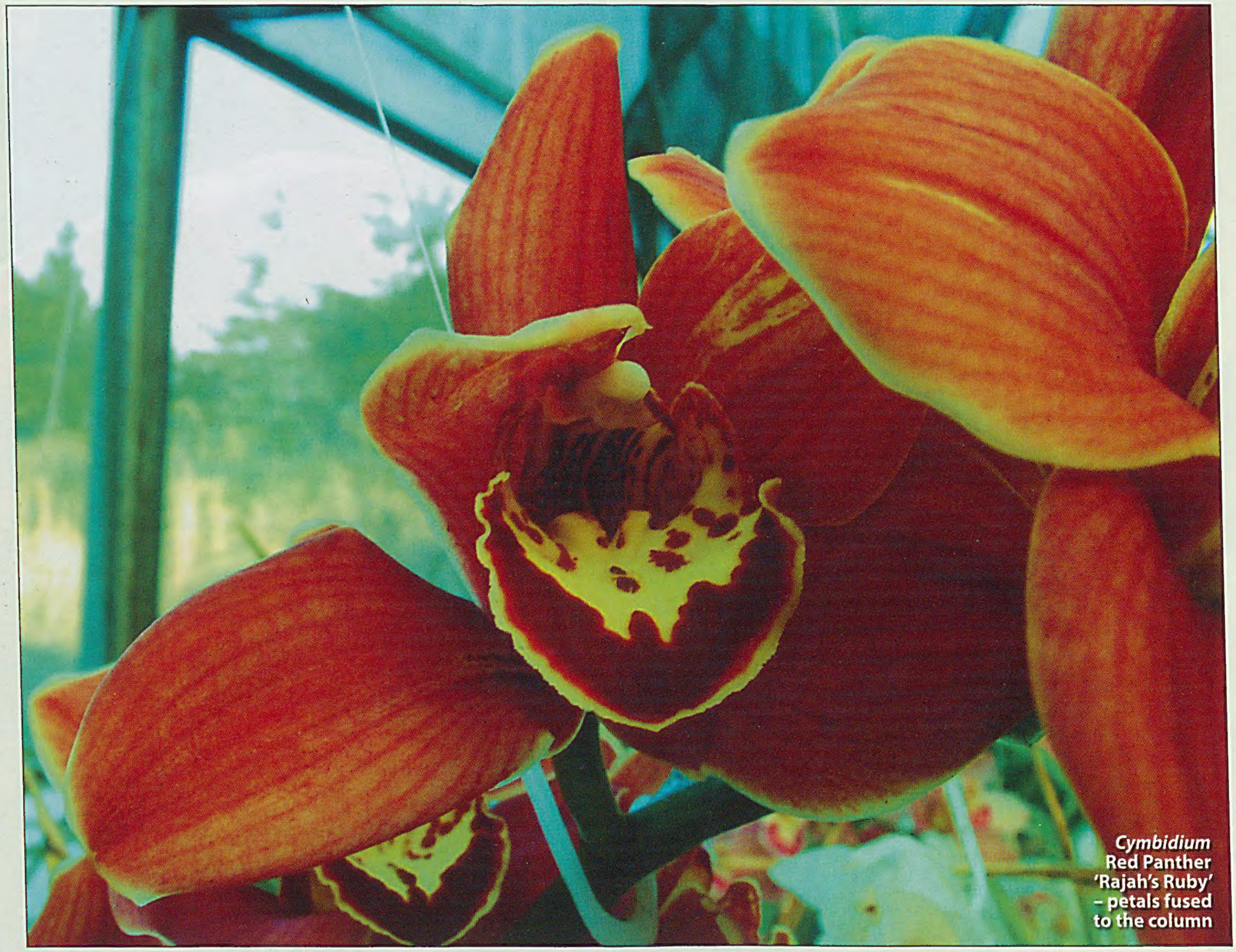
Below is a list of plants that I presently have, have previously owned over a period of years, or have worked with, or have observed and which regularly exhibit deformities:-

- Anna Szabo 'Geyserland' (Rod Stewart x Hazel Tyers)
- Atlantic Crossing (Claude Pepper x Coraki)
- Catamarca '105' (Atlantic Crossing x Mighty Tracey)
- Centennial (several varieties) (Dorama x Zumma Boyd)
- Choc Nut (Atlantic Crossing x Paul Robeson)
- Coraki 'Margaret 4n' and 'Norah 4n' (Wyalong x Alnwick Castle)
- Coraki Advent 'Bullion' (Coraki x Winter Advent)
- Cymbiflor (several varieties) (High Sierra x Miretta)
- Electric Ladyland 'Peats Ridge' (Claudona x Red Panther)
- Fire Ernie (several varieties) (Fire Water x Ernest Hetherington)
- Fire Water 'Tropics' (Atlantic Crossing x Red Panther)
- Flaming Vulcan 'Poppee' (Yowie Rose x Khan Flame)
- Foxfire Angel (several varieties) (Valley Angel x Zumma Boyd)
- Foxfire Dream (several varieties) (Lancashire Rose x Cleo Sherman)
- Foxfire Globe (Trigo Royale x Sylvan Globe)
- Foxfire Lady (several varieties) (Culpaulin x Foxfire Destiny)
- Foxfire Promise (several varieties) (Palace Promise x Sleeping Nymph)
- Foxfire Star 'Rapture' (Eastern Star x Rose Armstrong)
- Foxfire Suzanne (Cronulla x Sylvan Flame)
- Foxfire Waters 'Pink Globe' (Happy Promenade x Foxfire Rose)
- Golden Fantasy 'Tiger' (Royale Fare x Gold Finger)
- Green Dream (several varieties) (Cymbiflor x Janet Lees)
- Joan's Charisma 'Vanity' (Cronulla x Joan of Arc)
- Judy, Judy, Judy 'Yellow Moon' (Pure Lamb x Karen)
- Keiko Kageyama (Sonoma Sunset x Gustav Mehlquist)



Cymbidium Coraki Advent 'Bullion' – faulty columns and multiple pollen caps

- Kulnura Alchemy (Kulnura Snow x Masao Toya)
- Lamp Post (Tracey Reddaway x Sleeping Nymph)
- Lois Kelly 'O'Shaunessy' (Ngaire x Araluen)
- Lone Star 'Mr Scott' (Stanley Fouraker x Baltic {Kurun})
- Lunar Blaze 'Dural' (Blazing Fury x Lunar Flame)
- Lunar Wall 'Dural' ((Lunara x Wallacia)
- Memoria Merv Dunn 'Awesome' and 'Ultimate' (Sleeping Nymph x Sleeping Ransom)
- Mighty Carrot (Mighty Mouse x Tethys)
- Mighty Tracey (several varieties) (Mighty Mouse x Tracey Reddaway)
- Miretta 'Mc Beans 4n' (Claudette x Mirabel)
- On The Prowl (Red Panther x So Bold)
- Poetic Fair 'Exquisite' (Poetic x Winter Fair)
- Red Panther 'Rajah's Ruby' and 'Waikanae Jaffa 4n' (Claude Pepper x Khyber Pass)
- Rembrandt (Culpaulin x Valley Blush)
- Skye Flame (several varieties) (Lunar Blaze x Khan Flame)
- Sleeping Lamb (Sleeping Beauty x Ramesis)
- So Bold (Claudona x Claude Pepper)
- Spring Flame 'Blushing' (Khan Flame x Spring Surf)
- Surman's Rose 'Gosford Gold' (Lancashire Rose x Via Del Playa)
- Sylvan Snowdrift (Sylvania x White Christmas)
- Sylvan Star (Sylvania x Baltic) - I note that the Pink Baltics are generally regarded as being either Kuruns or some other early diploid pink variety. They are definitely not Baltics.
- Terama 'Yowie Bay' (Westholme x Sensation)
- Valley Blush (several varieties) (Siram x Palace Court)
- Valley Crown 'Princess' (Valley Knight x Palace Court)
- Valley Knight (Lunagrad x Valley Pearl)
- Valley Legend 'Gee Whiz', and Valley Legend 'Eternity' (Cleo's Valley x Culpaulin)
- Valley Regent 'Drumbeat' (Lunata x Rolf Bolin)
- Valley Vapour 'Purity' (Valley Flight x Vivacious)
- Via Mar Tranquila 'Milky Way' and 'Mt Cook' (Via Tranquilia x Solana Beach)
- Wesley Davidson (James Tee Kirk x Red Beauty)
- Winter Alvin (Winter Wonder 'Botany Bay' x 'Gardalvin Errol)
- Yowie Rose 'Vulcan' (Lancashire Rose x Terama)



***Cymbidium* Red Panther 'Rajah's Ruby' – petals fused to the column**

I'm sure that this list is far from complete. I also have a list nearly as long as the above list of Cymbidiums that have not, to the best of my knowledge, shown any inclination to have flower deformities.

This exercise was prompted when I flowered three seedlings that I had bought in to my collection from a local grower. The three seedlings flowered in 2017 and all three showed deformities including fused segments and column faults. That made me wonder whether there was a parent in common with other Cymbidiums showing similar deformities. After weeks of researching my records and racking my brains I came to an interesting discovery. First I found amongst some of my many hundreds of photos, a few photos of flowers with deformities. Some of these are shown with these notes.

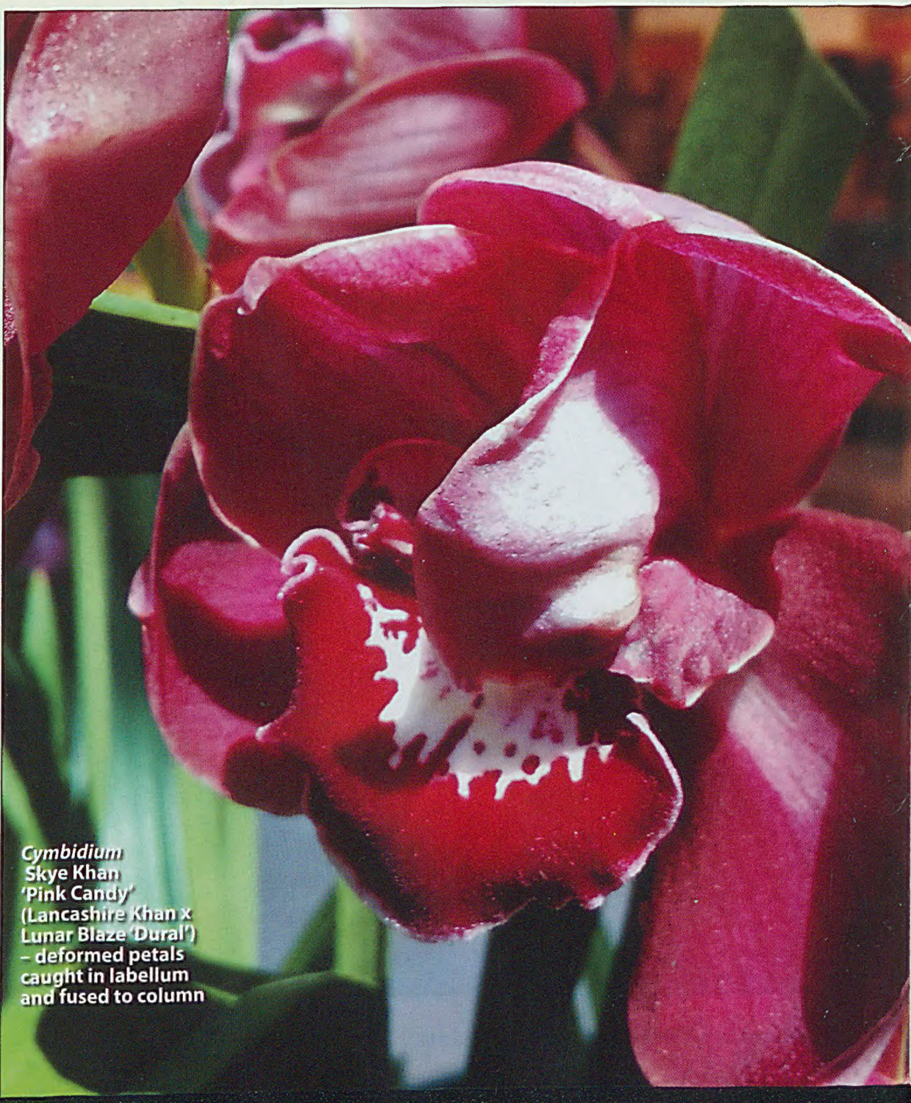
There seemed to be a number of well known "trigger' plants that set off flower deformities in Cymbidiums. It is relevant to make reference to these as they gave me a stepping stone to the final answer. Fanfare 'St Francis 4n' (4n being tetraploid) became well known for contributing double and triple labellums to a percentage of its progeny down through several generations. Crosses with which I have had personal experience and which have been affected included Tongariro, Winter Wonder, Cronulla, Wyong Giant and Dress Parade. There are probably many more that could be added to this list.

Coraki 'Margaret 4n' and Coraki 'Norah 4n' contributed to deformities such as pedicles fused to the spike, petals fused to the column and multiple pollen caps. Crosses affected include Karen, Coraki Gold, Catamarca, Tracey Reddaway, Mighty Margaret and Mighty Tracey.

Red Panther 'Rajah's Ruby 4n' and 'Waikanae Jaffa 4n'. Crosses affected include Yowie Flame, Electric Ladyland, So Bold, Fire Water, On the Prowl and Foxfire Abundant. Symptoms include petals fused to the column, colour breaks in the flowers, especially with 'Waikanae Jaffa 4n' and faulty columns.

Sensation contributed only one deformity as far as I can see and that is petal caught in lip. Crosses affected include Yowie Flame, Akebono, Chianti 4n, Winevale, Powder Puff, Gurrana and Bush Fire.

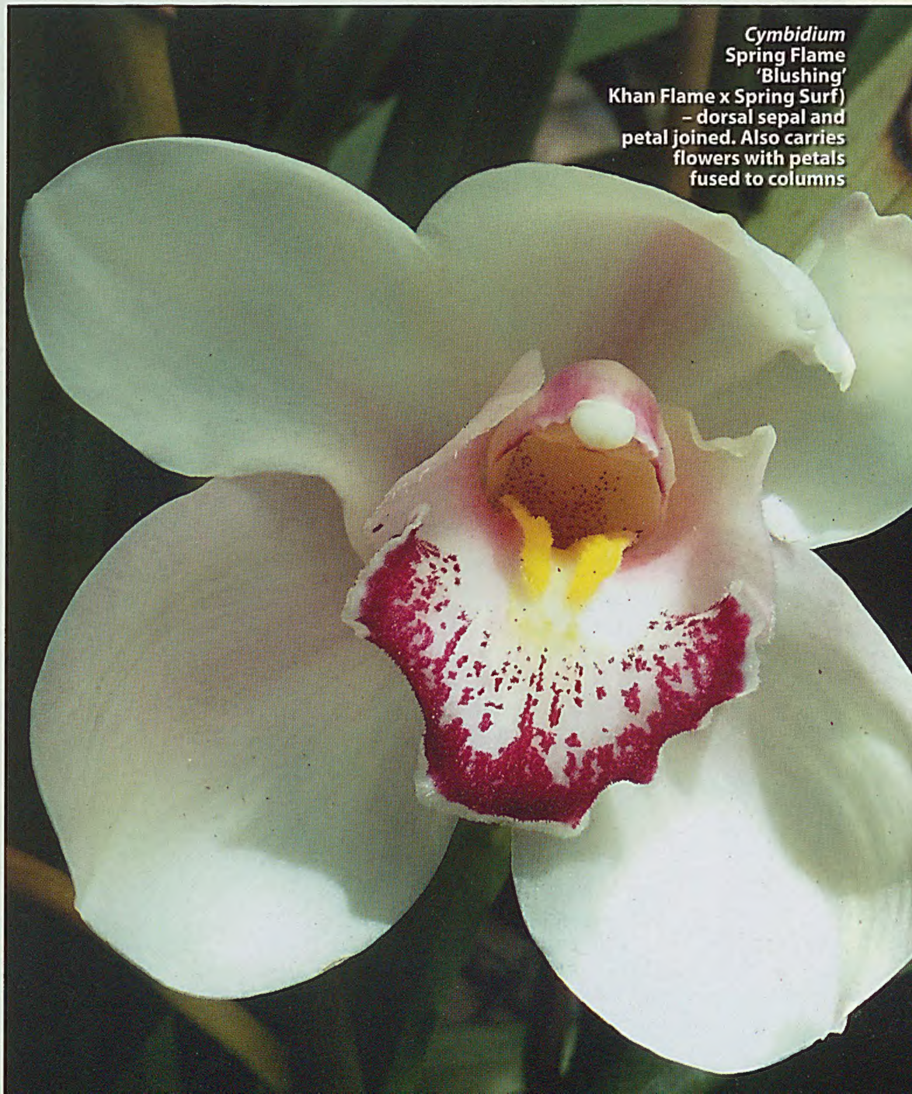
Sussex Dawn 'Dorothy May' has contributed faults to a vast number of its progeny. Deformities include no labellums as in Mem. Merv Dunn 'Awesome' and to a lesser extent in Mem. Merv Dunn 'Ultimate' as well as double and triple pollen caps and missing flower segments. Pure Ransom 'Sceptre' can present with the same faults as well as column deformities. Many years ago when I was doing stomatal measurements using the microscope at Alvin Bryant's nursery, one of the orchids that stood out was Sussex Dawn 'Dorothy May' which was assumed to be a diploid. The measurements which were double checked for this orchid show measurements which were high in the triploid range. One of its progeny, Ovation 'Emerald' doesn't breed although Ovation '24 4n' does breed. The Culpaulin cross (x Melinga) as made by Wondabah Orchids was a diploid cross. I don't know whether Culpaulin 'Cecil Park' came from this cross or from a cross using one of the American Sussex Dawns. 'Cecil Park' will produce some seed on occasion but there is a high anneuploid content in the seedlings. Both Culpaulin 'Cecil Park' and Ovation 'Emerald' have very heavy flower substance that could be expected from a triploid or a tetraploid. Culpaulin 'Butterball' from the Wondabah diploid cross had stomatal measurements below the normal diploid range and will only very occasionally produce a small amount of seed. This and other anomalies in Sussex dawn progeny would tend to indicate that it is an anneuploid which will breed although in cases where there is a percentage of progeny which appear to be higher than diploid there is a corresponding high deformity rate. Of its other progeny with deformities are Valley Legend 'Gee Whiz' and Golden Fantasy 'Tiger' which have petals fused to the column and Centennial, Valley Zenith, Sleeping Lamb and Zumma Boyd. Zumma Boyd 'Melva' or 'Everglades' as it is known was thought to be a tetraploid although crosses with this orchid are very few and far between and have resulted in a high percentage of anneuploid progeny indication that this orchid is an anneuploid.



Cymbidium Skye Khan 'Pink Candy' (Lancashire Khan x Lunar Blaze 'Dural') – deformed petals caught in labellum and fused to column

Claudona, Doris Aurea and Claude Pepper also produce a percentage of progeny with deformed flowers including Choc Nut, Paul Robeson, Wesley Davidson, Keiko Kageyama and Electric Ladyland. The deformities tend to be petals fused to the column with many cases presenting as severe. The labellums of the affected flowers tend to turn red and die before the unaffected flowers do. This, of course, makes the spikes useless.

Last but not least is the Balkis line of breeding. Deformities run right down the white flower line and in many cases become even more noticeable when intercrossed with other lines which also carry deformities. This line runs down through the Fred Stewarts, Winter Fairs, Winter Paradises, White Paradises, Winter Wonders, Sylvanias, Etta Barlows, Mary Anns, Sylvan Stars, Foxfire Suzannes, Poetic Fairs, Charles Tooveys and many others. Some of the affected varieties include Poetic Fair 'Exquisite', White Paradise 'Silver Beach', Gardalvin 'June', Pearl-Balkis 'Delight', Pearl-Balkis 'Cookbridge', Gurrana Marie, Wollar 'Emperor', Valya Craig 'Judy', Dress Parade and Alegria 'St Lita'. Generally, the deformities in this group are confined to petal inside the lip. The exception is Alegria 'St Lita' which has a colour break in its segments which it passes on in a more intense form to some of its progeny. Now we can look at why these deformities occur.


***Cymbidium* Spring Flame 'Blushing' Khan Flame x Spring Surf) – dorsal sepal and petal joined. Also carries flowers with petals fused to columns**

Incidentally, the cross which goaded me into action resulting in this article is Anna Szabo 'Geyserland' x *parishii* 'Emma Menninger 4n'.

Although *Cymbidium parishii* 'Sanderae' is regarded as being a species, there was some controversy, even in the early years that it may have been a natural hybrid. In fact, according to Andy Easton *parishii* 'Sanderae' **was only found once** and the plant ended up in the collection of Sir George Holford in England. It has round bulbs like *Cymbidium insigne* which is probably one of its parents. The other parent is a matter of conjecture. It has been used in hybridising extensively, particularly in recent years using the tetraploid form 'Emma Menninger'. The "species" going around as *Cymbidium sanderae* is according to Andy, a natural hybrid from the species *Cymbidium eburneum*. The two crosses made by Sir George Holford that are relevant to this article are Garnet (*parishii* x *lowianum*) in 1914 and Dryad, (*parishii* x *insigne*) in 1915.

Andy Easton, who was given a plant of the tetraploid form of *Cymbidium parishii* by Don Wimber who did the colchicine conversion maintains in his New Horizon Orchids public forum 3rd September, 2017 "... I am sure the plant is a hybrid". The plant has been known for years as *parishii* 'Emma Menninger 4n'. He also maintains in the same post that "Unlike all these taxidiots who never GROW Cymbidiums or hybridise with them and evaluate the progeny, we speak with decades of experience". Andy comments further that "there was a selfing of the tetraploid form sent in flasks to Australia in the late 1980's. Considerable variation, particularly in the lip markings appeared. This was the "tell' as far as determining whether it was a species or something more complicated. We followed up with a selfing of our mother plant (ex Armacost & Royston) in the late 1980's. When the diploid strain started to bloom they were absolutely horrible. They grew in a diverse range of foliage types and most of the flowers had a decidedly green colouring."

From the information gained so far, one can only be of the view that *Cymbidium parishii* is a natural hybrid, hence the variation in the progeny of the selfings. Other very early crosses from last century using *C. parishii* are Seamew (x *i'ansonii*) Sir George Holford 1915, Jasper (x Eburneo-lowianum) Sir George Holford 1915, Elfin (x Pauwelsii) Sanders 1918, Brownie (x Lowgrinum) Sir George Holford 1919, Wagtail (x Gottianum) Sir George Holford 1919 and Martin (x Lowio-grandiflorum) Sir George Holford 1920.

All of the cymbidiums in the list at the beginning of this article have *C. parishii* in their background through Dryad, Garnet, Elfin and Martin and in many cases multiple combinations of the four. The extensive list of Cymbidiums that I have where deformities are not present do not have *C. parishii* anywhere in their backgrounds.

I wondered why *C. parishii* features so prominently in the background of many modern hybrids. I can only conclude that it passes on desirable shape factors to its progeny, as well as relatively flat segments and firm substance. Many of the varieties that exhibit popular show bench shape have *C. parishii* in their backgrounds. The varieties without *C. parishii* background tend to have generally more pointed segments and flowers that are less filled in. Of course the whole issue can be slightly muddied by instances of incorrect parentage which seems to have occurred occasionally in some of the early 20th century hybrids where breeders tried to protect their breeding lines from other hybridisers.

As a result of the research for this article, another possible discovery was uncovered. Although the results are not conclusive I would suggest that there are two sources of peloria in *Cymbidium* flowers which can be traced to two breeding lines. It has been suggested that *Cymbidium lowianum* is a source of petal peloria and I would tend to agree with that line of thought although ventral sepal peloria as typified by Cleo's Melody 'Freakout' and its progeny seems to have originated from the Martin line of breeding.

Examples of petal peloria include Flamingo 'Tri-Lip', Butterfly 'Dillibirra', Vidar 'Harlequin' and Mavourneen 'Jester'. More work needs to be done in this area, especially with the Martin line of breeding.

Returning to the main topic of this article, it seems that we now need to consider whether breeding for Australian showbench shape is worth the considerable spoilage incurred by deformed progeny from combinations of the *C. parishii* line. The more interbreeding that is done with the current showbench lines, the more we will see deformities arise. Perhaps the Americans are right in implementing an open star shaped category in their judging system which recognises a massive group of breeding lines that do not carry the deformities of the *C. parishii* line of breeding. Arguably, it might be prudent that this should happen here before all the varieties from non *C. parishii* lines have disappeared and all we have left is an array of round cymbidiums with a plethora of flower deformities. ■

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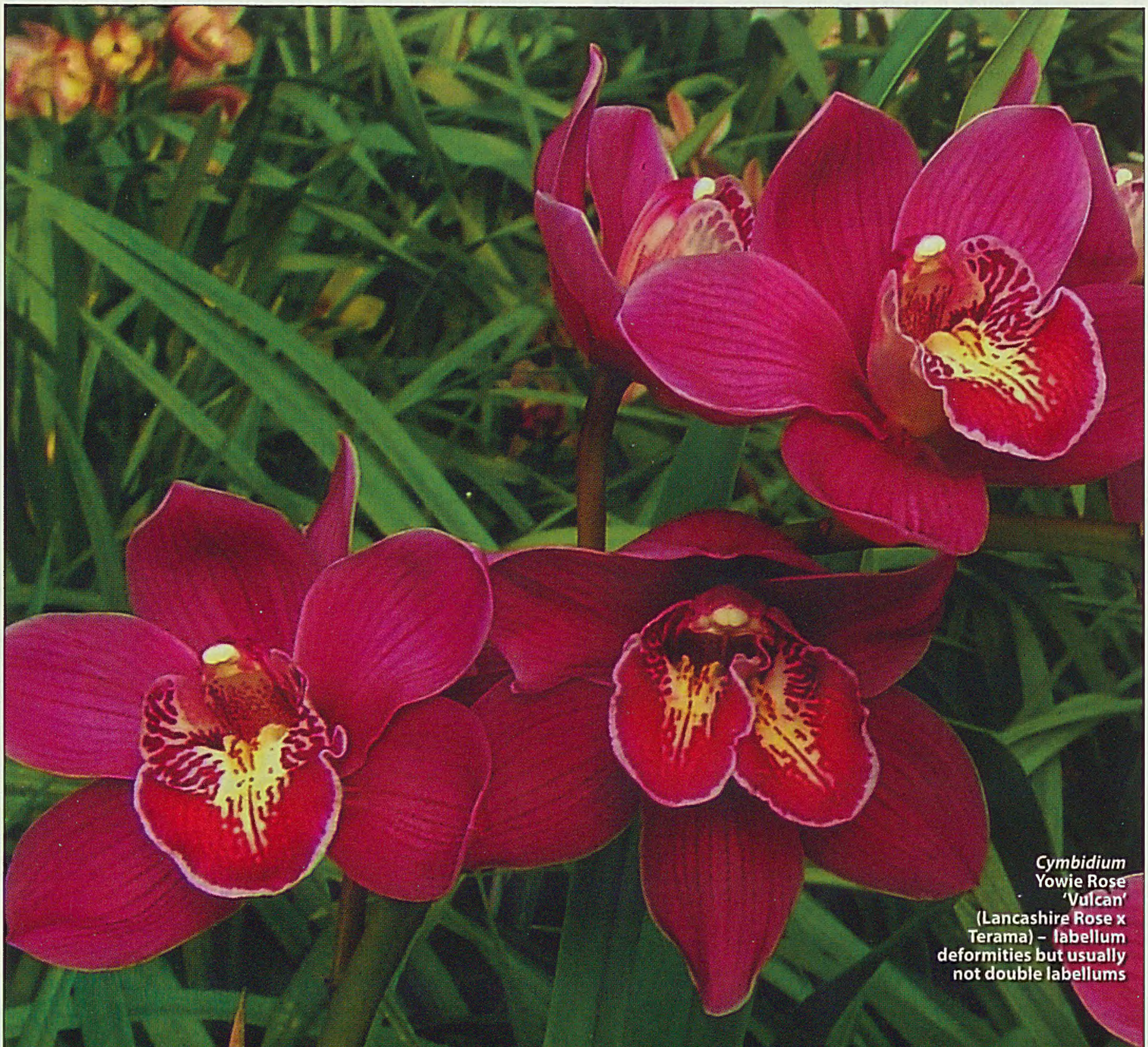
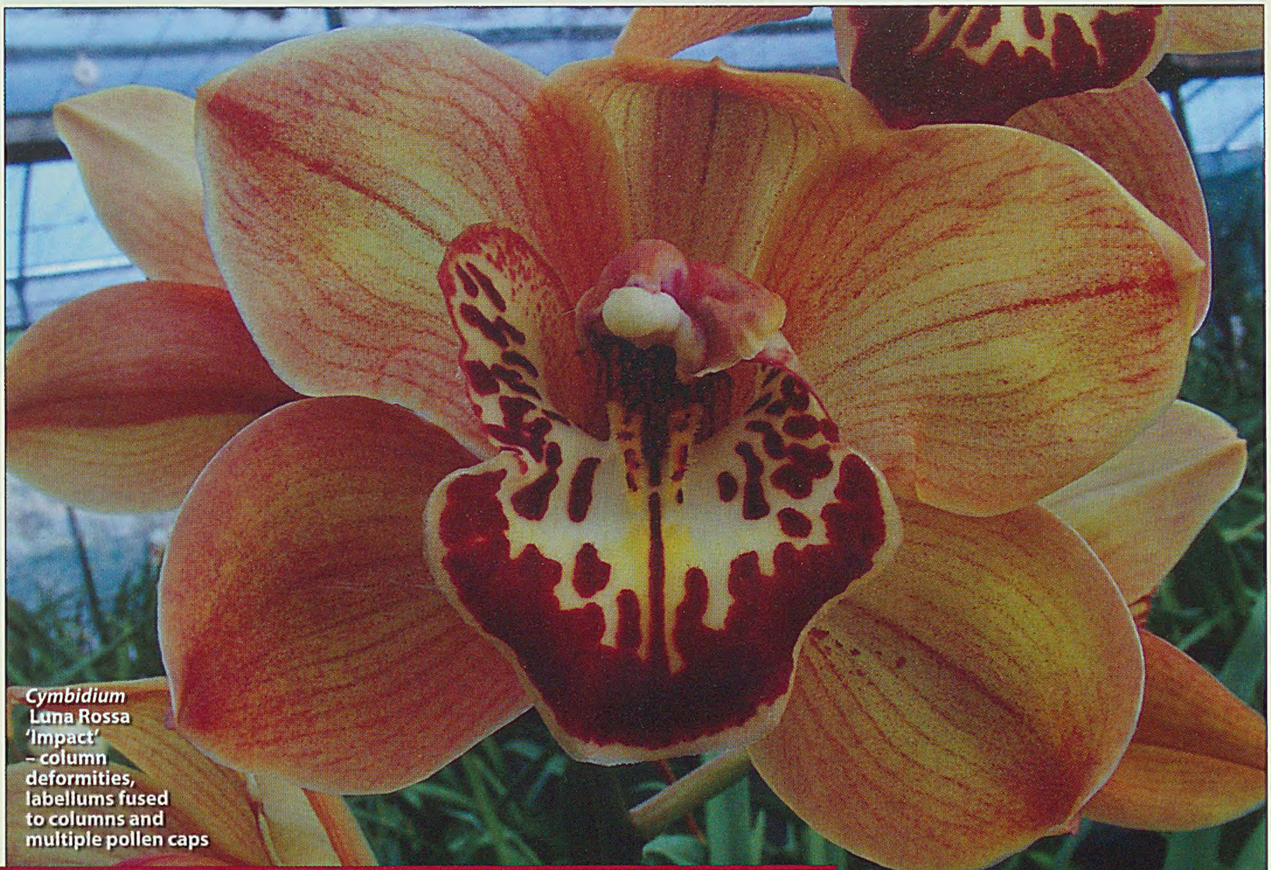
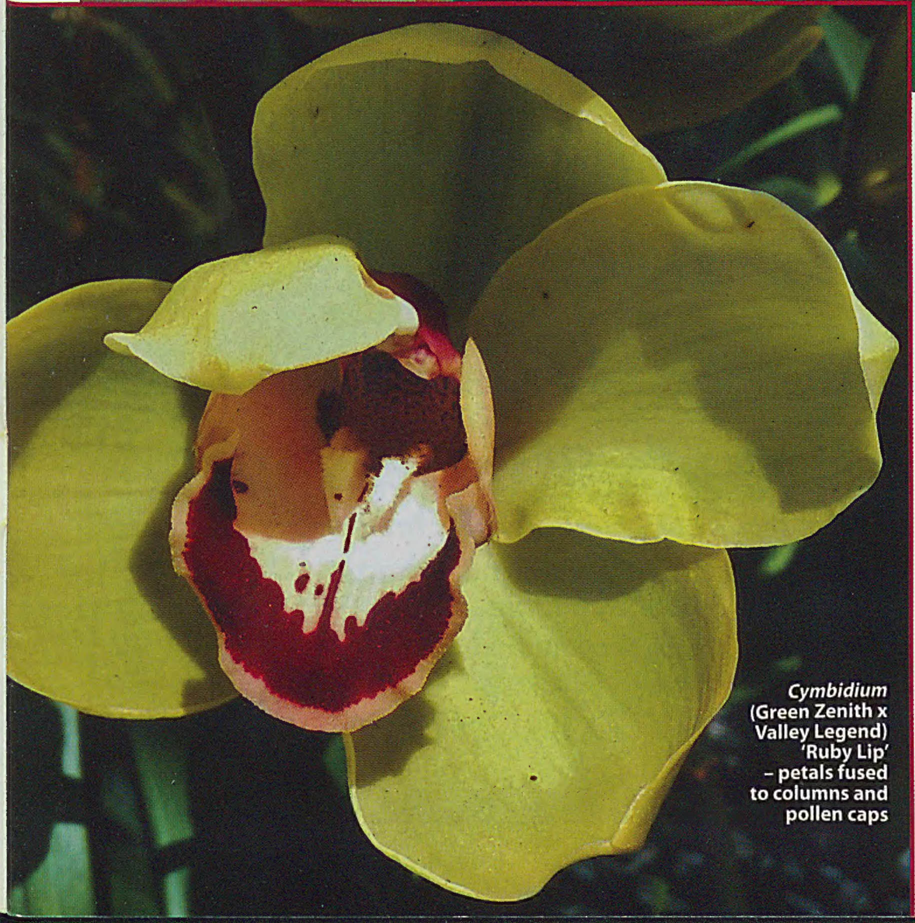


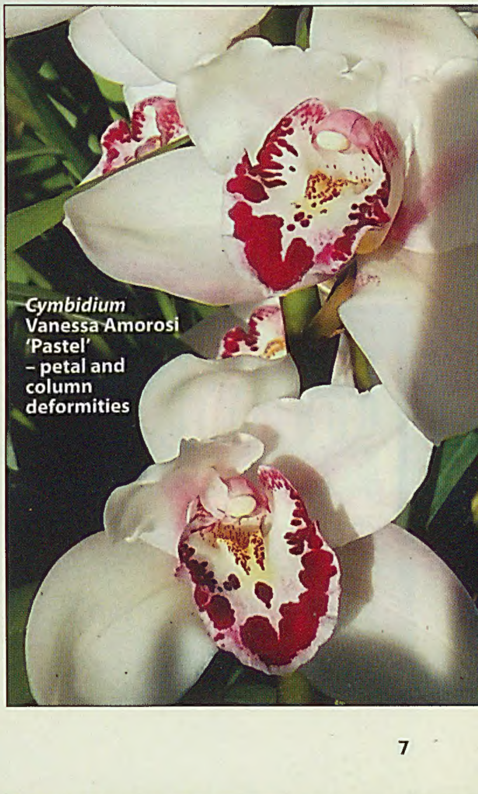
Cymbidium
Yowie Rose
'Vulcan'
(Lancashire Rose x Terama) – labellum deformities but usually not double labellums



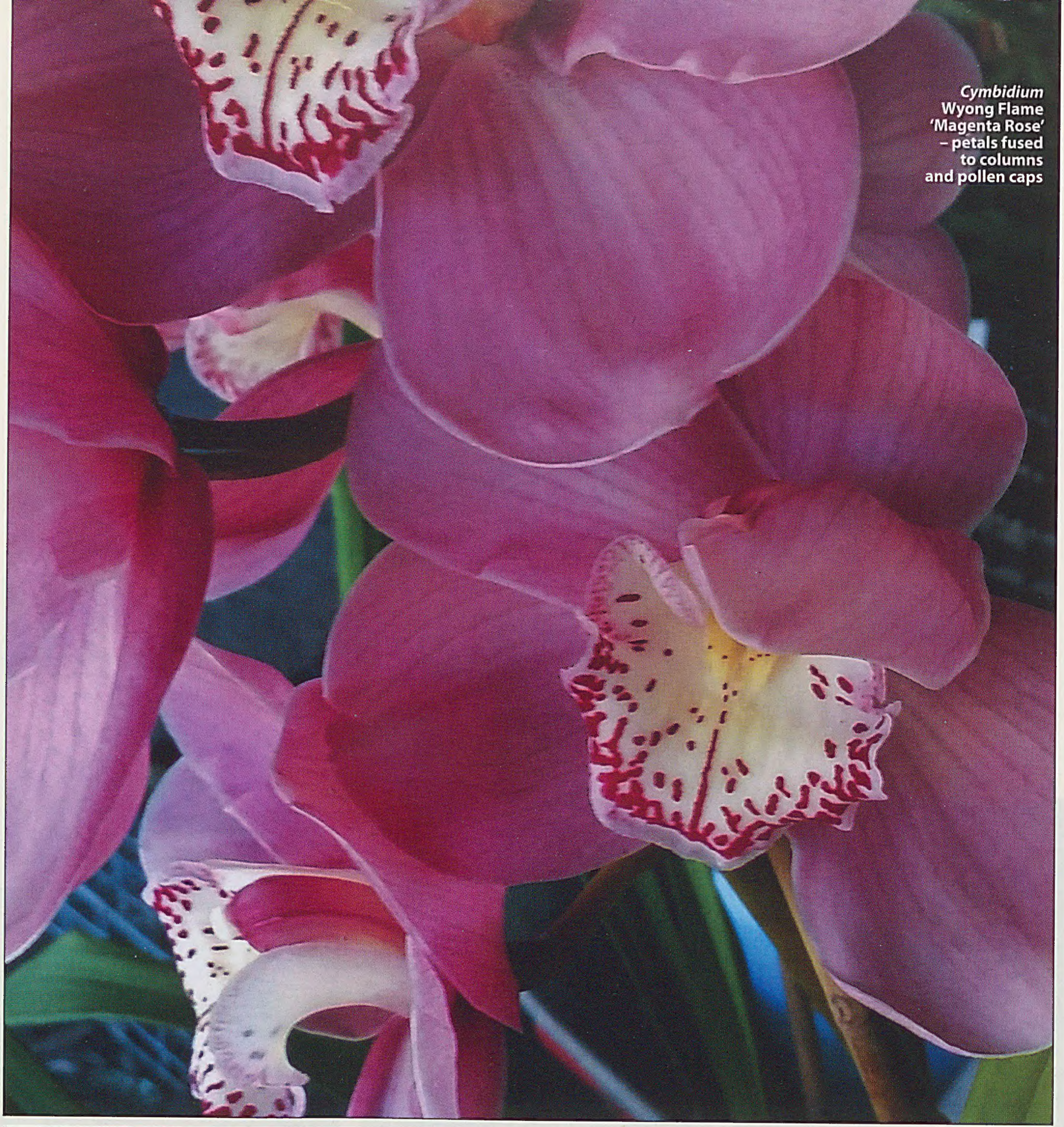
Cymbidium Luna Rossa 'Impact' – column deformities, labellums fused to columns and multiple pollen caps



Cymbidium (Green Zenith x Valley Legend) 'Ruby Lip' – petals fused to columns and pollen caps



Cymbidium Vanessa Amorosi 'Pastel' – petal and column deformities



Cymbidium Wyong Flame 'Magenta Rose' – petals fused to columns and pollen caps

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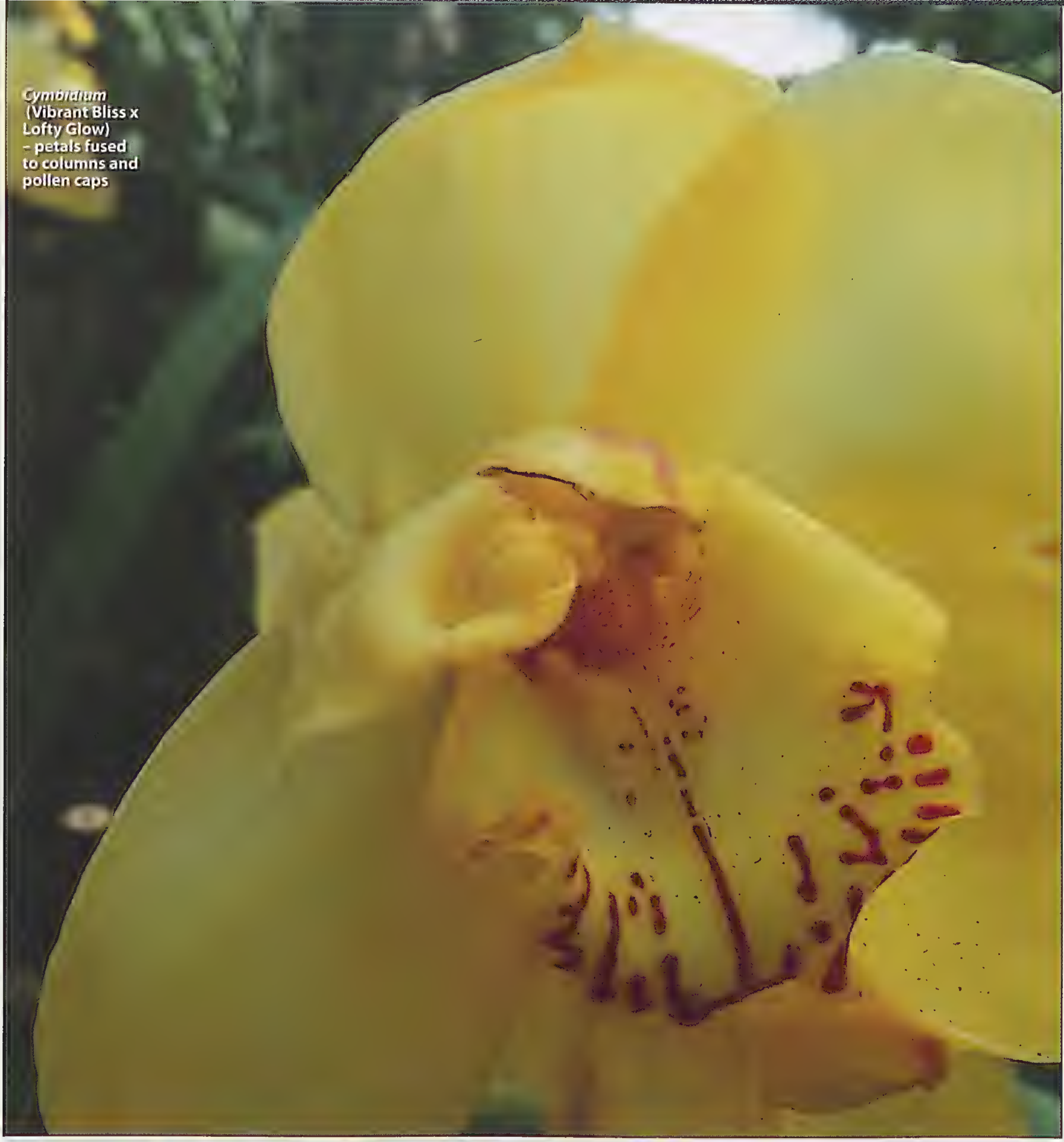

Cymbidium (Vibrant Bliss x Lofty Glow) – petals fused to columns and pollen caps

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Two new products from the Orchid Pot Company

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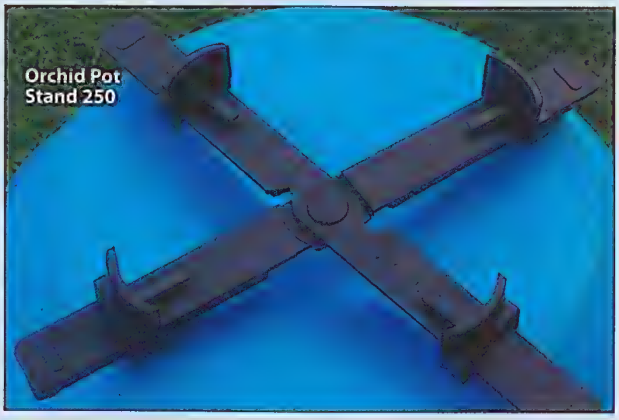
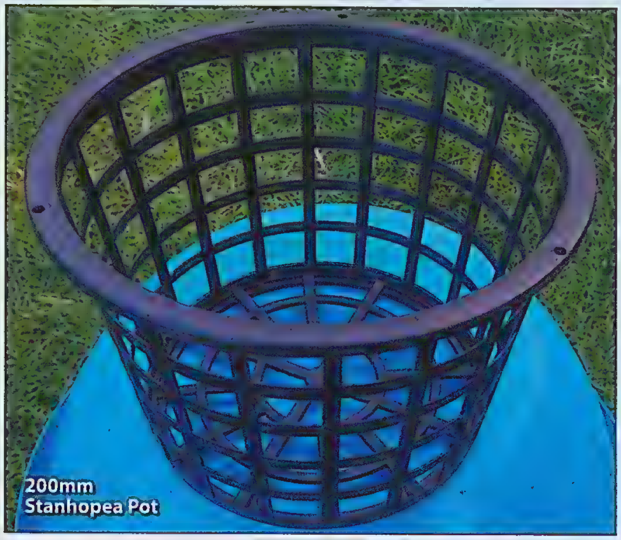
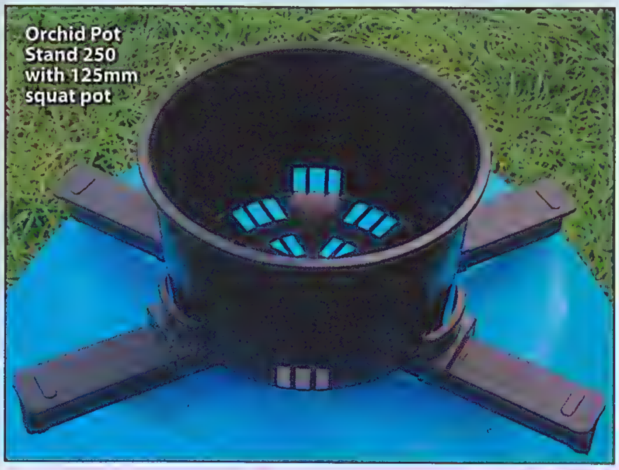
For more details on this and other products, pots and pricing, visit the website www.orchidpotco.com or contact John at the Orchid Pot Company on 02 6581 1735 or email: theorchidpotco@gmail.com


Orchid Pot Stand 250


200mm Stanhopea Pot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Laeliocattleya Bowri-Albida 'Kennedys'

by David Banks

This colourful intergeneric hybrid orchid is still encountered in orchid collections under the wrong name of *Laelia* Finckeniana 'Kennedys'. A full history was published in the *AOR* back in 2010. True *Laelia* × *finckeniana* was described as a natural hybrid between a white form of *Laelia anceps* and *Laelia albida*.

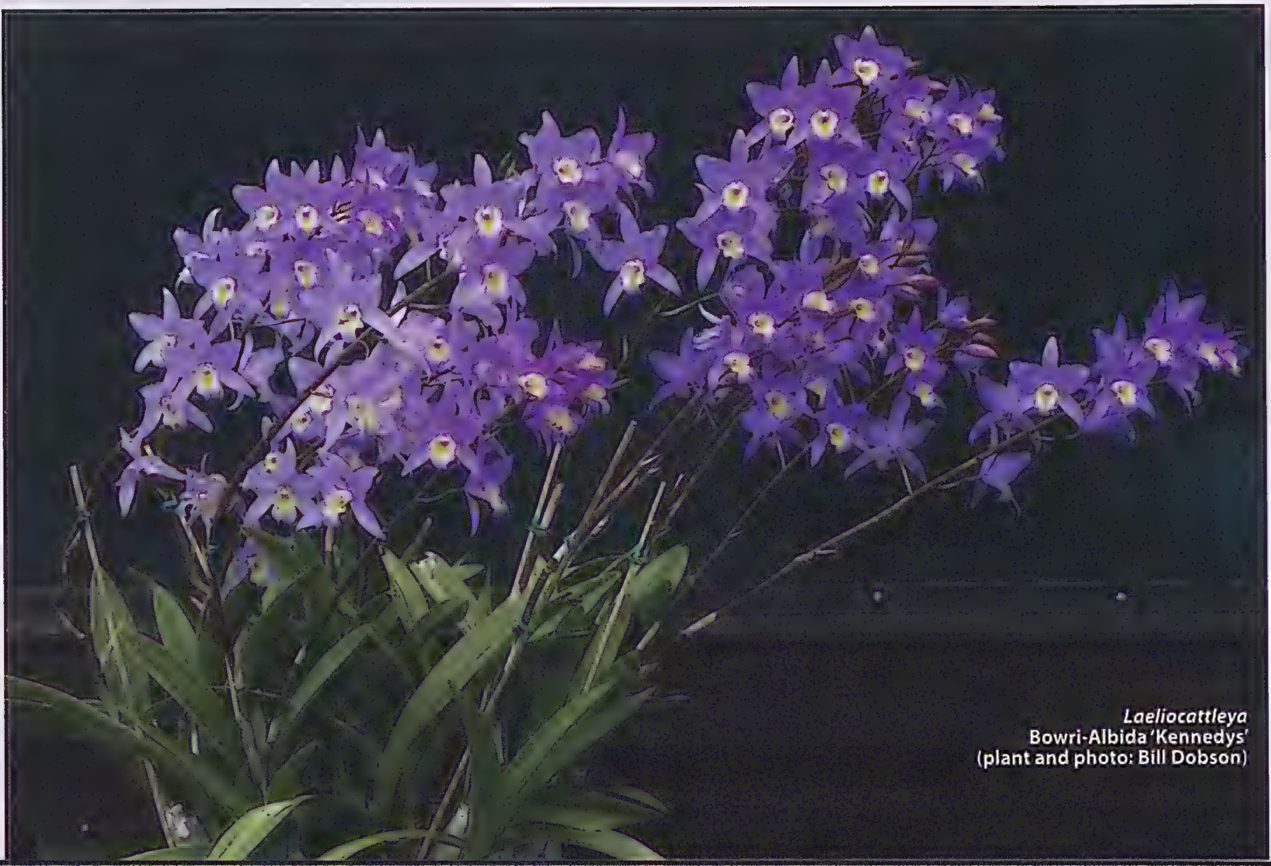
But the really telling factor is this. *Laelia* species all have 8 pollinia. It is the major diagnostic feature that separates them taxonomically from the related *Cattleya*, which has 4 pollinia. Our so-called *Laelia* Finckeniana 'Kennedys' produces 4 large pollinia masses (often incorrectly termed as grains) and 4 small and poorly formed pollinia bundles. This confirms that this popular cultivar is actually an intergeneric hybrid between *Laelia* and *Cattleya*; our *Laelia* Finckeniana 'Kennedys' is really a *Laeliocattleya*. So what is the other parent?

I deduced that it would have to be a *Cattleya* species that has cylindrical pseudobulbs, with two or three leaves, no elongated or distinct rhizome between the pseudobulbs, and clusters of rose-purple flowers with a similar labellum to the "intergeneric hybrid". As luck would have it, when I was debating this in my mind, I had a plant of *Cattleya bowringiana* in bloom. It was one of those "lightbulb" moments. That's it! There is absolutely no *Laelia anceps* in this plants pedigree. I have no doubt that *Laeliocattleya* Bowri-Albida is now the correct name for this plant, made with either a white or pale pink *Laelia albida* and a typical rose-coloured *Cattleya bowringiana*

Therefore I would recommend to those who are fortunate to own *Laelia* Finckeniana 'Kennedys' to relabel your plants as ***Laeliocattleya* Bowri-Albida 'Kennedys'**.

Bill & Lorraine Dobson live near the coast on the northern beaches of Sydney NSW at Dee Why. They grow this plant (along with *Laelia purpurata* and *Dendrobium speciosum*) outside in full sun experiencing temperatures from Zero to 48 degrees C. This year's blooming of 2018 produced 18 flower stems with a multitude of hot pink eyecatching blooms. ■

David P. Banks
Seven Hills, NSW
email: david@hillsdistrictorchids.com



Laeliocattleya
Bowri-Albida 'Kennedys'
(plant and photo: Bill Dobson)

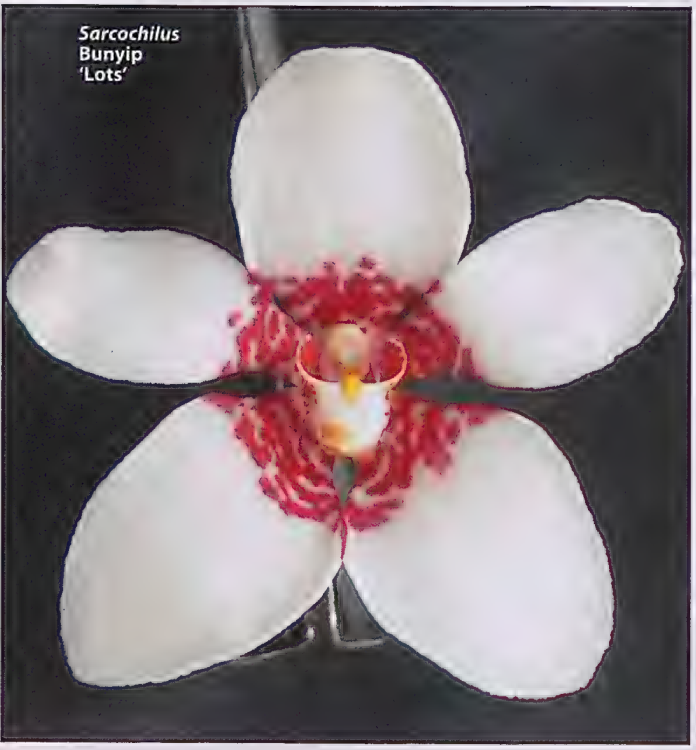
Unlocking *Sarcochilus* the Hidden Treasures

Text and photos by Scott Barrie, Barrita Orchids

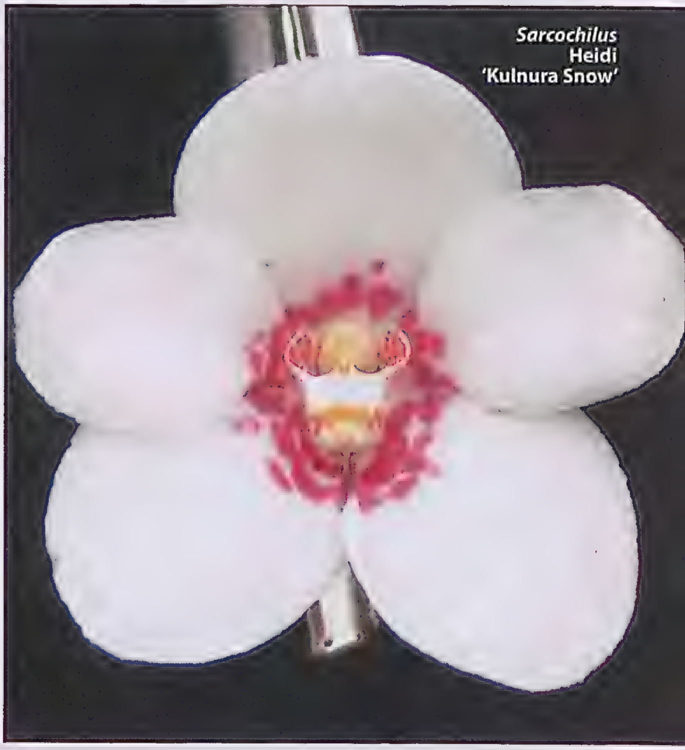
From the outset of our *Sarcochilus* breeding program, the plants growing vigour has been at the forefront of our selection process. As the plants with albino yellow coloured flowers do not grow as strongly as the normal coloured types. This led us to make out-crosses to, what we thought were, non-alba carrying breeding lines. With the plan to improve the vigour of the alba line and cross them back to yellows and release the albino yellow being carried.

To breed alba yellow, we need to turn off the red pigment and reveal the yellow below. As the red/pink pigment in orchid flowers is only held in the epidermal layer and the yellow can be in any layer. When the red/pink is "turned off" we see the underlying yellow. When I say turn off, I am referring to the use of the recessive genes for albinism. For this to be expressed it must be in "carried" in both parents.

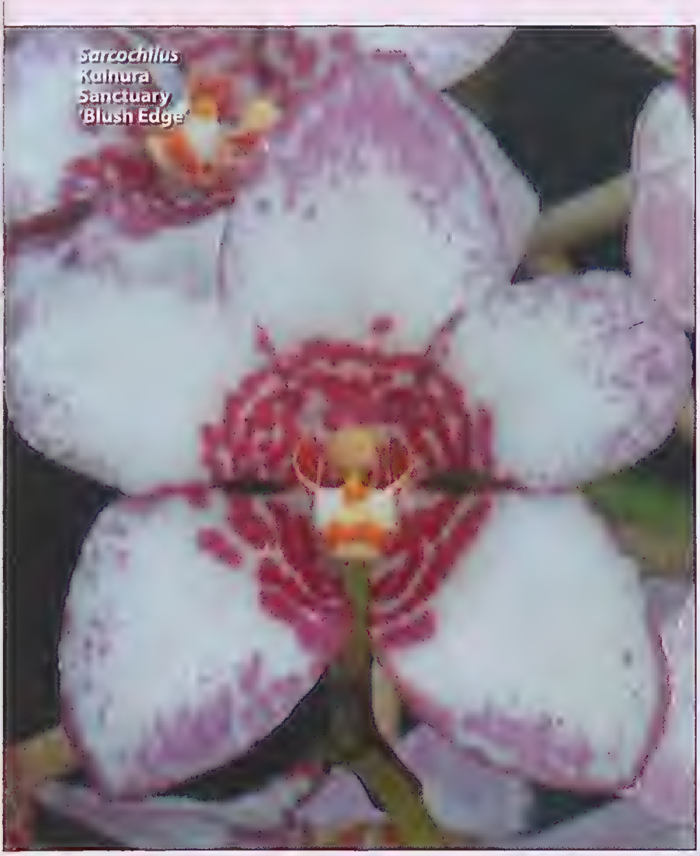
We have made several versions of *Sarcochilus* Kulnura Sanctuary. This making used *Sarcochilus* Bunyip 'Lots' x *Sarcochilus* Heidi 'Kulnura Snow' and was aiming at whites, with the *Sarcochilus* Heidi used being from our third generation of line breeding for white. Almost all the resulting seedings were white. However, we saw the emergence of the Kulnura Sanctuary cultivars 'Blush Edge' and 'Pale pink rc'. The plant selected for the out-crossing program was *Sarcochilus* Kulnura Sanctuary 'Pale pink rc'. We used this plant for the colour patterning; you need the red/pink spread over the surface of the flower. But most importantly, it is an exceptional grower and producer of multiple spikes. In October of 2017 we flowered two of the crosses from this plan.



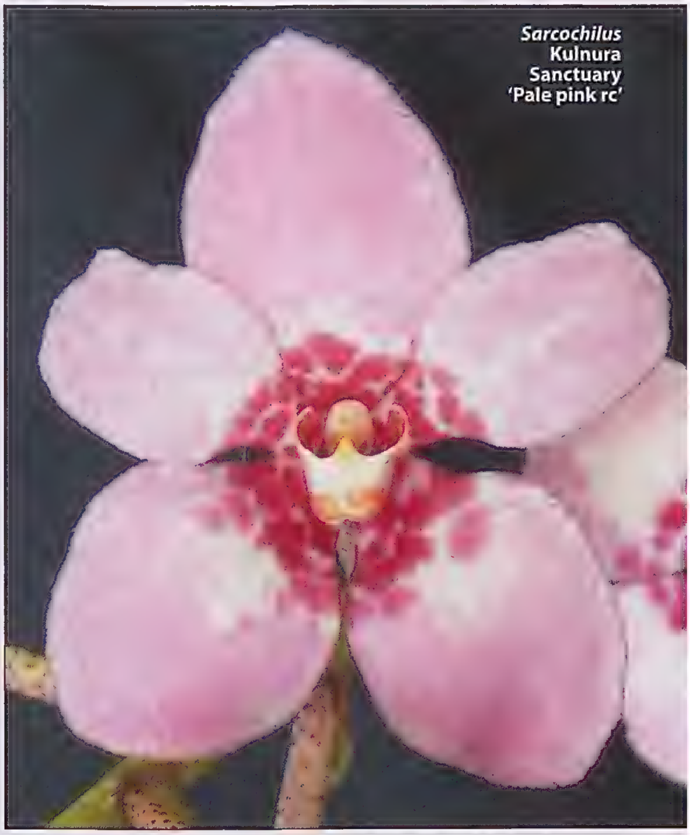
***Sarcochilus* Bunyip 'Lots'**



***Sarcochilus* Heidi 'Kulnura Snow'**



Sarcochilus Kulnura Sanctuary 'Blush Edge'



Sarcochilus Kulnura Sanctuary 'Pale pink rc'

Australian Orchid Review

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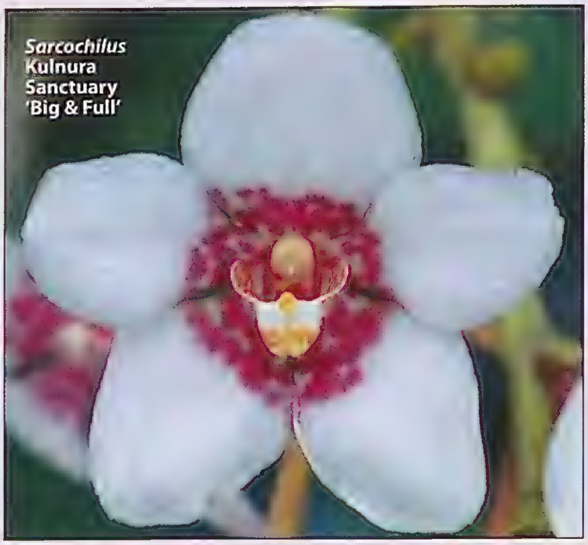
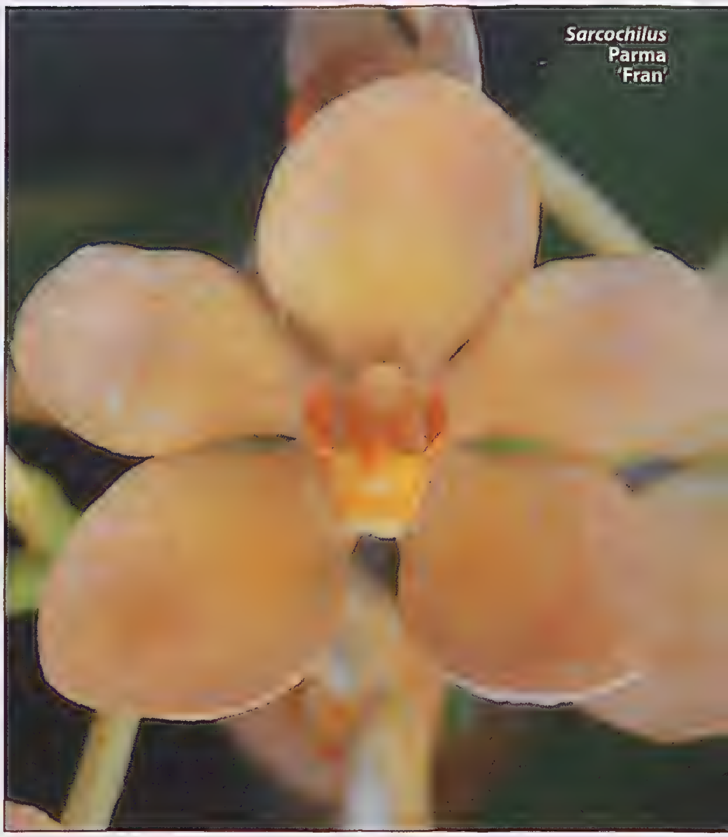
Sarcochilus Kulnura Gallery (Kulnura Sanctuary 'Pale pink rc' x Parma 'Fran')

As I mentioned earlier, we did not think *Sarcochilus* Kulnura Sanctuary carried alba genes. There had not been an alba in this line for five generations! However, as you can see from the examples, we flowered full yellow and "poached eggs" as well. Though unproven, I believe the full smooth yellows will breed as solid reds. The solid red is also a recessive colour.



Sarcochilus Kulnura Sanctuary 'Big & Full'



Sarcochilus Parma 'Fran'

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Sarcochilus Kulnura Famous (Kulnura Sanctuary 'Pale pink rc' x Kulnura Coral 'Yellow Early')

From the result shown in *Sarcochilus* Kulnura Gallery we can now expect an albino result in this cross as well. But again, there are more hidden treasures in this cross. The second recessive, red, shows here in addition to the yellow. We were aware of the red in *Sarcochilus* Kulnura Coral (Rebecca x Kurumba). We were surprised to learn that it is also recessively carried in this *Sarcochilus* Kulnura Sanctuary. Again, there had not been a true red in this line of *Sarcochilus* Kulnura Sanctuary for five generations. There are, of course, other *Sarcochilus* Kulnura Sanctuary makings that are red and pink. These results are even more surprising given that according to Orchidwiz, this grex is composed of 72.7% *Sarcochilus hartmannii*, 21.9% *Sarcochilus fitzgeraldii*, 3.1% *Sarcochilus hirticalcar*, 1.6% *Sarcochilus olivaceus* and 0.8% *Sarcochilus falcatus*. It's basically a *Sarcochilus* Fitzhart!

These crosses are from our 2013 series. The flowers featured here are from plants that were only 2 years from flask. There are many more to flower in the spring of 2018. It is results like these that excite interest in these wonderful orchids.

Barrita Sarcochilus Open Day to be held at Barrita Orchids 121 Barnes Rd Kulnura NSW 2250 on Sunday (Sarcday!) **21st October 2018**. Flowering *Sarcochilus* will be available for sale on the day in a full range of colours and styles. Seedlings are also available throughout the year from Tinonee Orchid Nursery.

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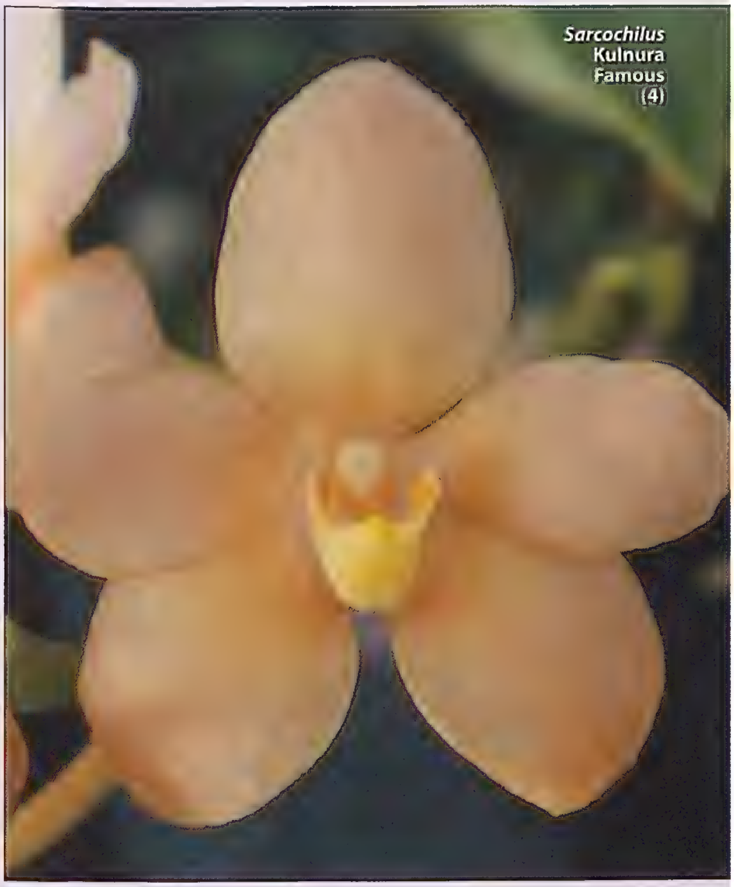
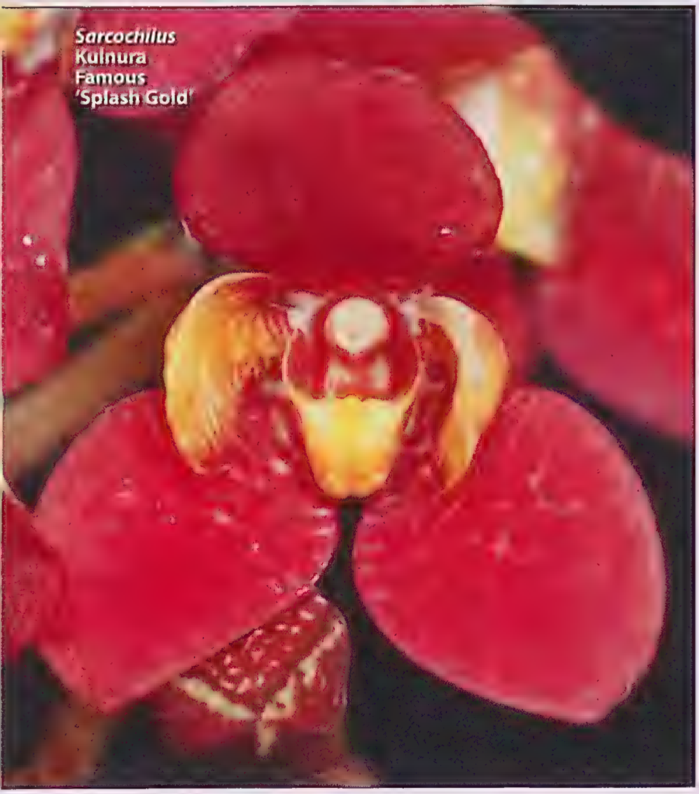
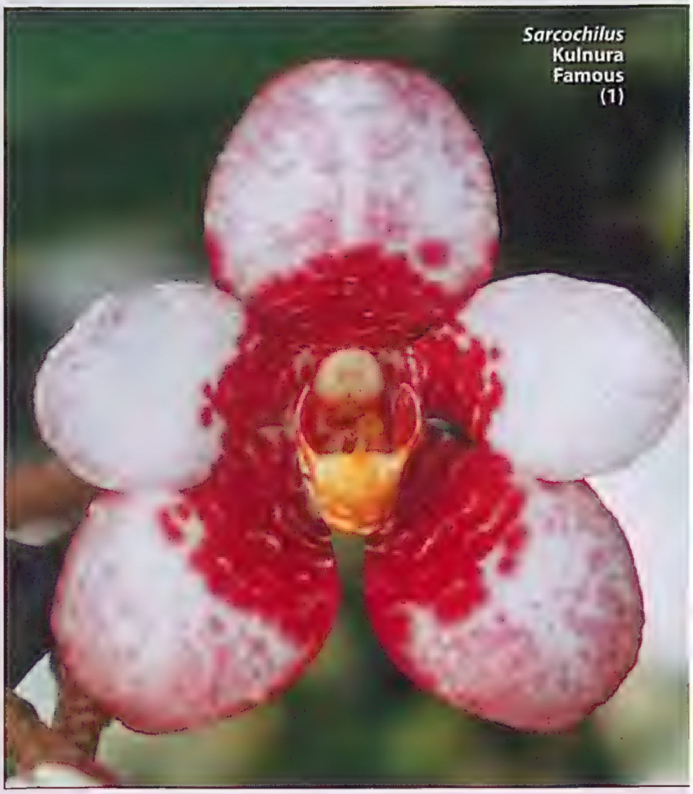
Website: www.barritaorchids.com



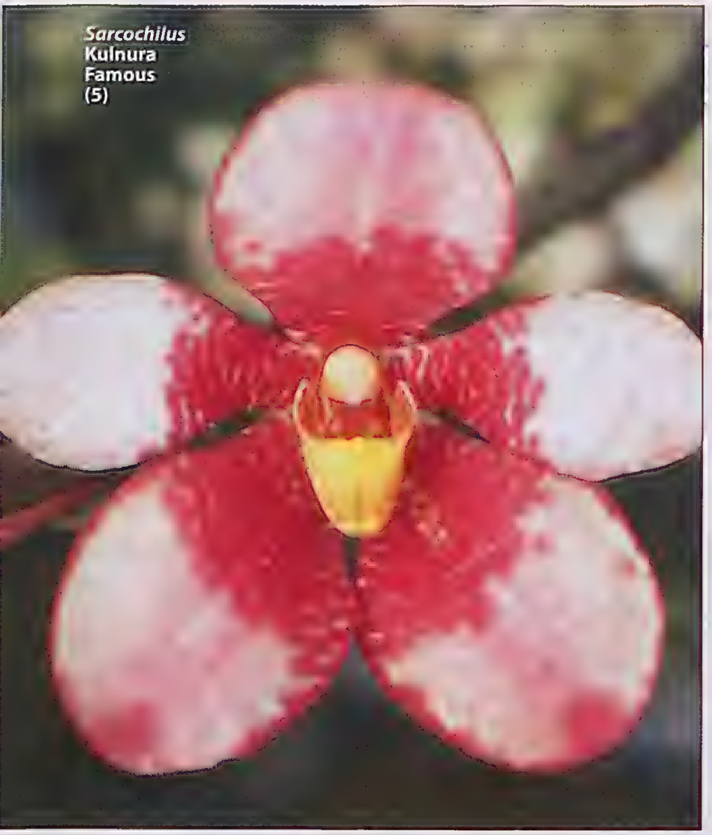
***Sarcochilus* Kulnura Famous (4)**

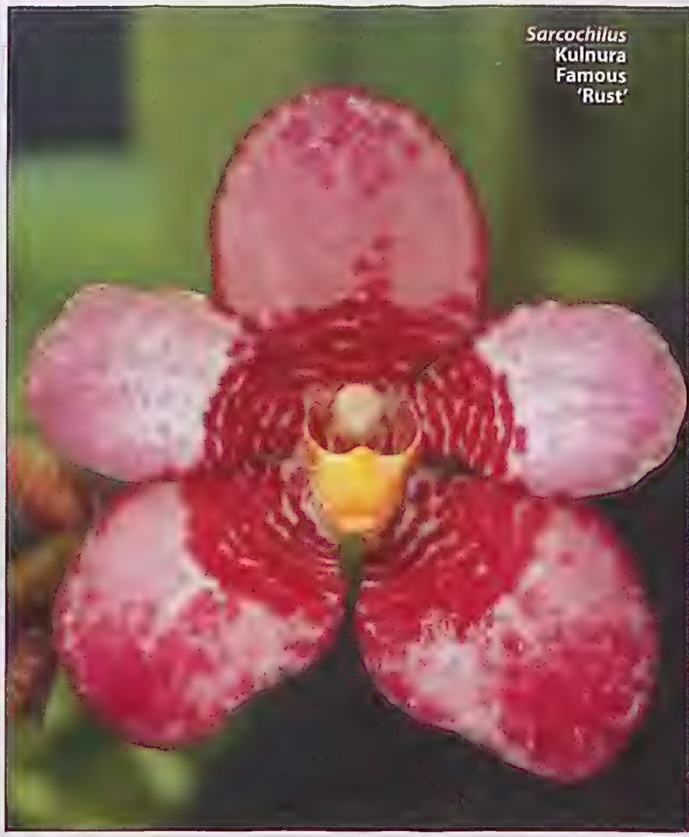


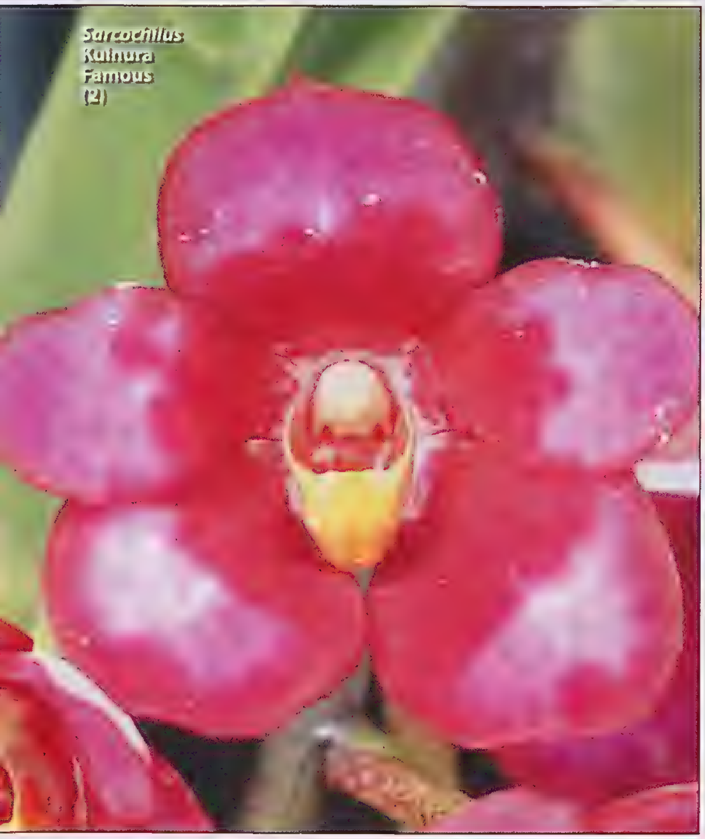
***Sarcochilus* Kulnura Famous 'Splash Gold'**

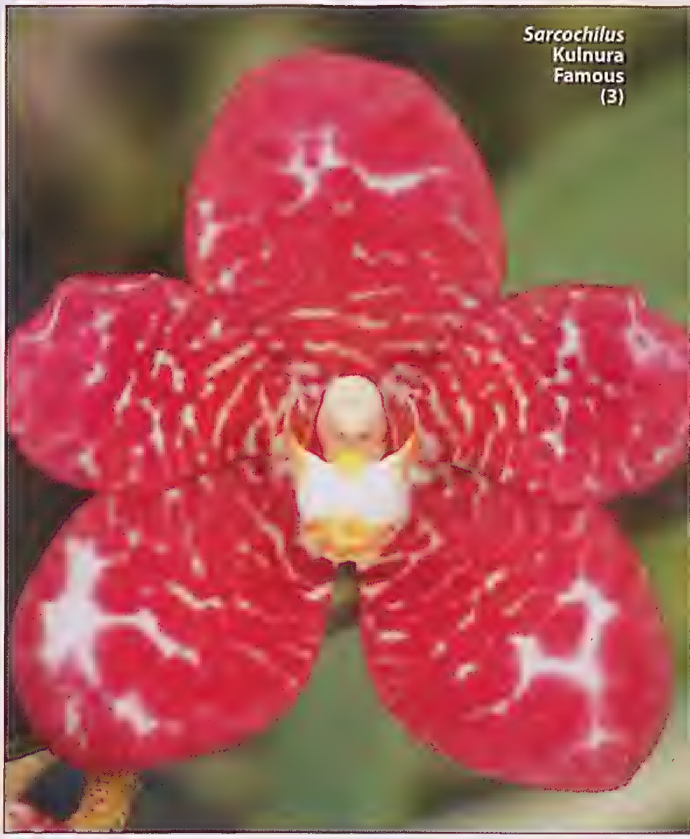


***Sarcochilus* Kulnura Famous (1)**


Sarcochilus Kulnura Famous (5)


Sarcochilus Kulnura Famous 'Rust'


Sarcochilus Kulnura Famous (2)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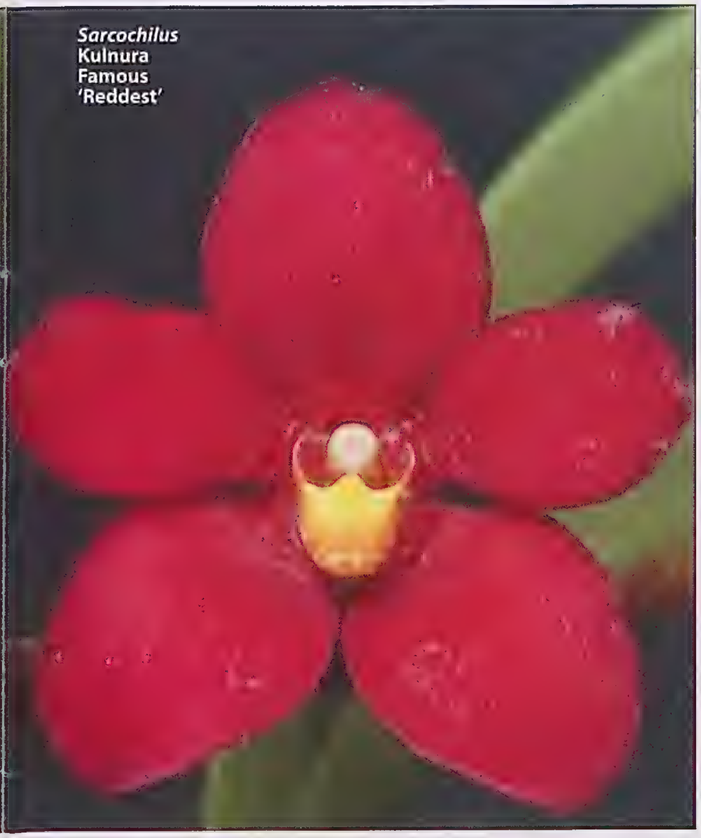
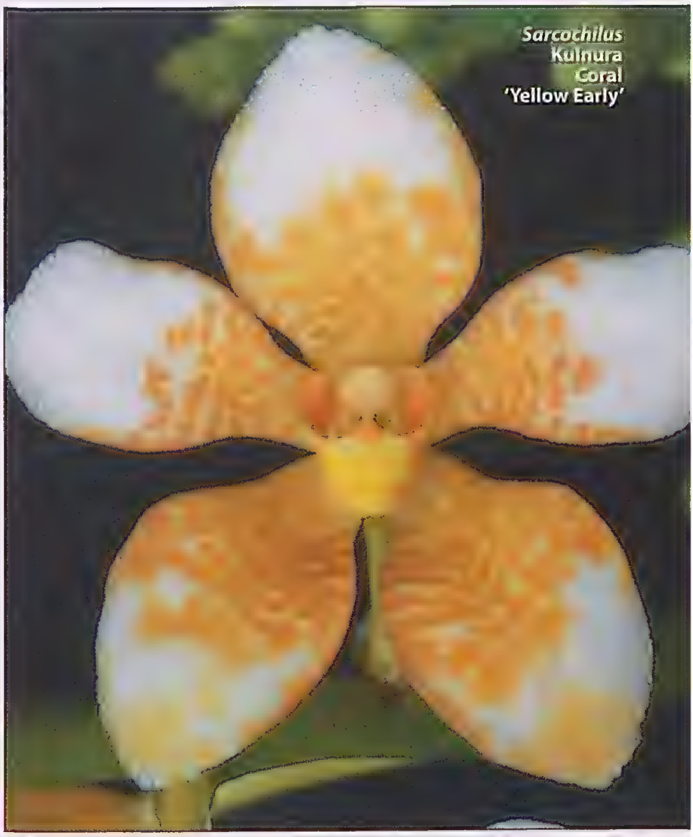


Sarcochilus
Kulnura
Famous
'Reddest'



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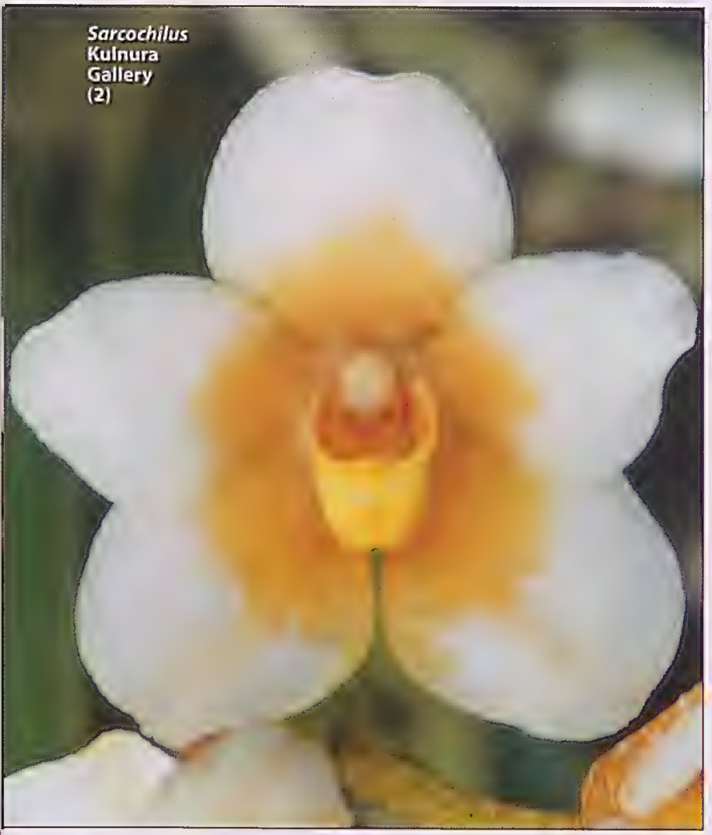
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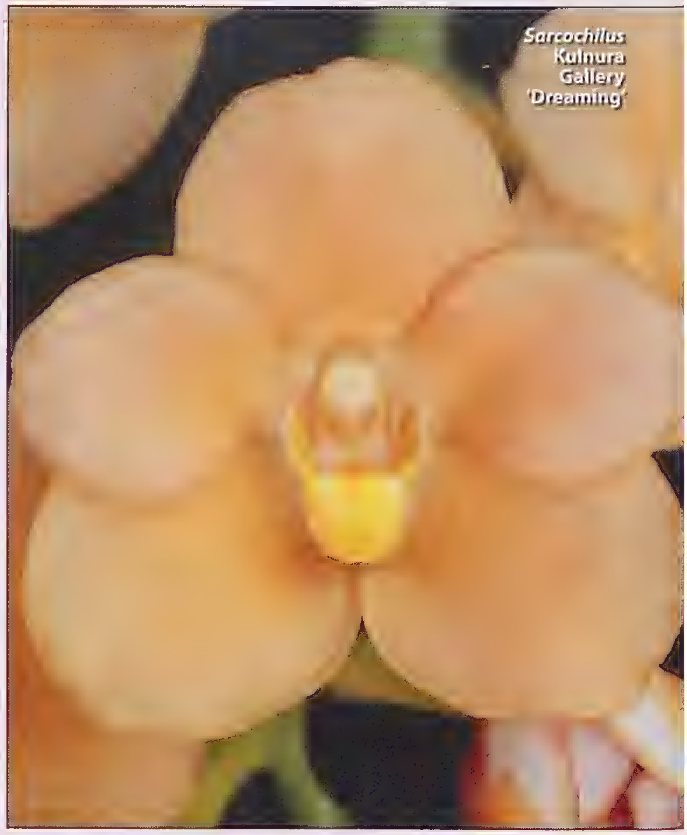
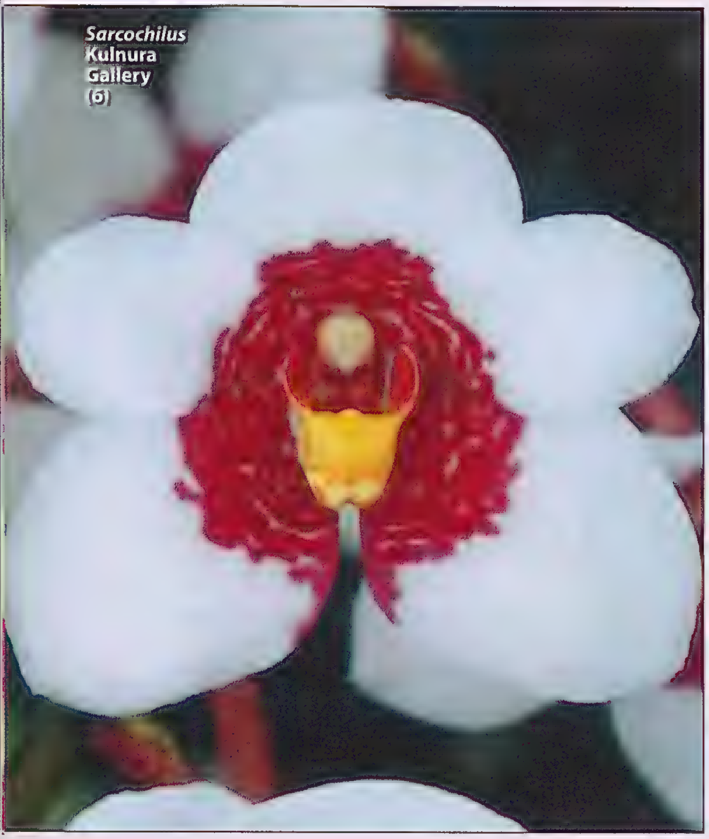

Sarcochilus Kulnura Gallery 'Dreaming'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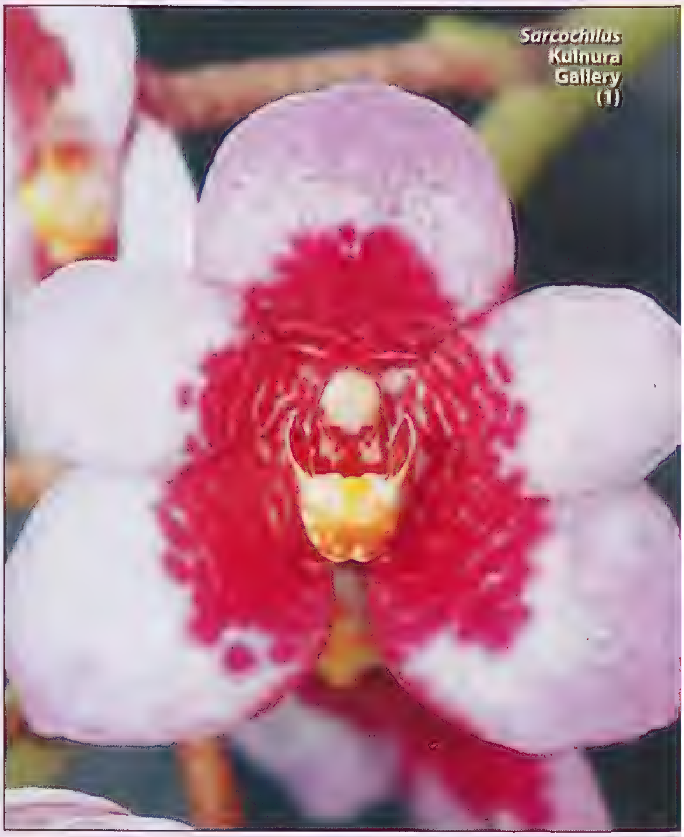
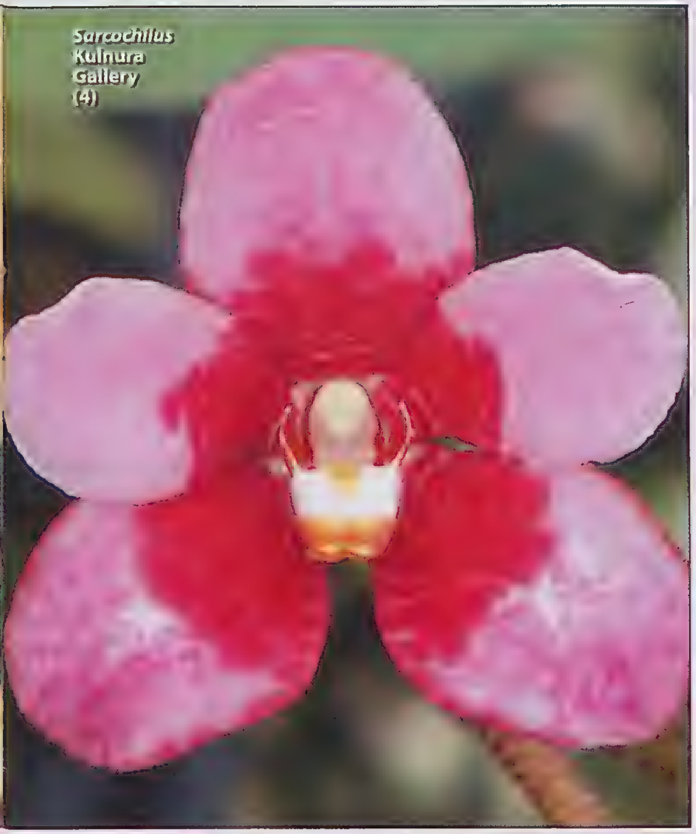
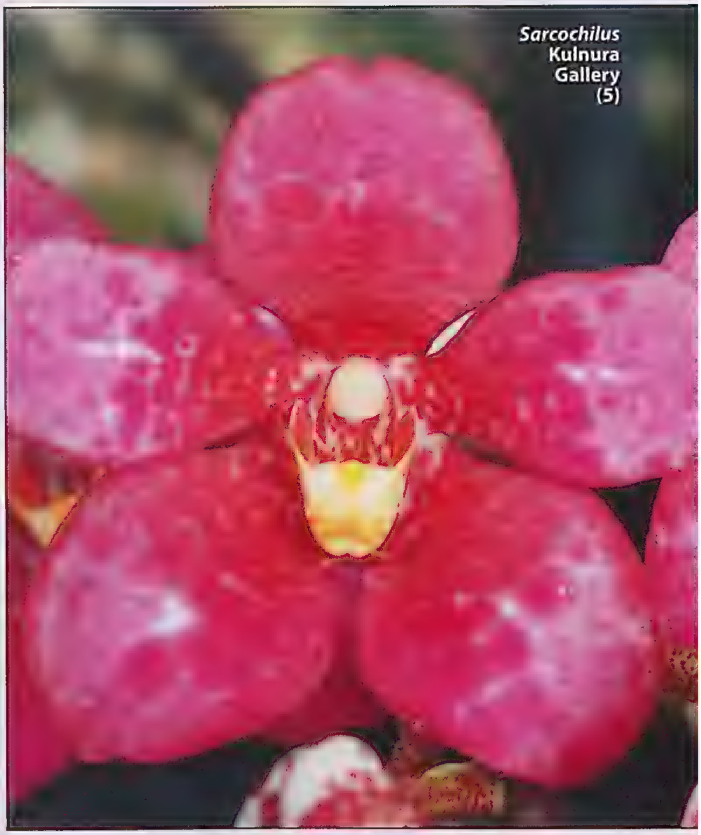

Sarcochilus Kulnura Gallery (1)



Sarcochilus Kulnura Gallery (4)



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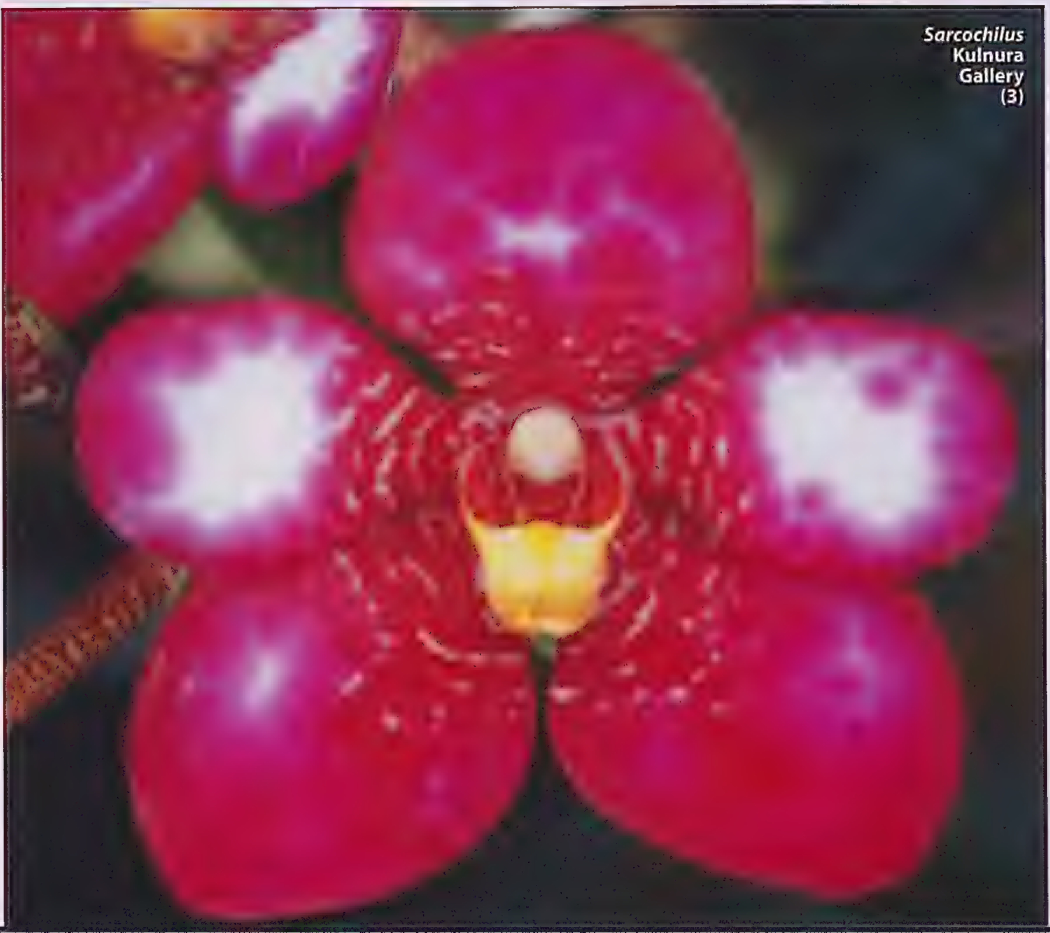


Sarcochilus Kulnura Gallery (3)

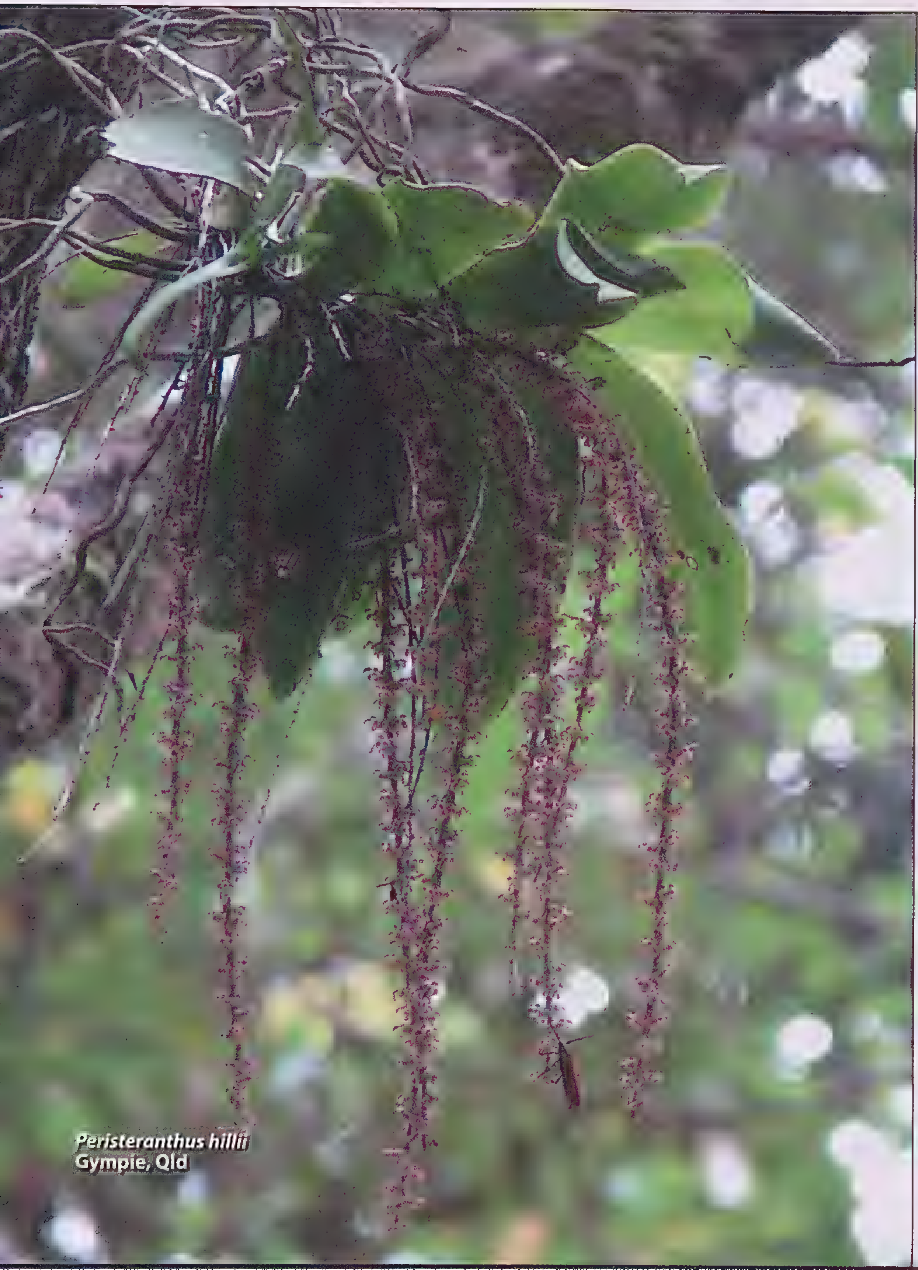
Peristeranthus hillii and possible pollinator

Text and photos by Justin Priddy

Peristeranthus hillii is a monotypic genus and one of the larger growing members related to *Sarcochilus*. It is native from near Port Macquarie in New South Wales along the coast and ranges to the Bloomfield River in North Queensland.

I took the photographs that appear in this note near my home in Gympie in South-East Queensland, of a large plant of *Peristeranthus hillii* in full flower and apparently in the process of being pollinated.

After a bit of research I identified the insect as a Lycid Beetle - Family Lycidae most likely being *Porrstoma rhipidus* (Long-nosed Lycid Beetle) which feeds on nectar. The plant had two beetles on the blooms. I watched the beetles for quiet some time, as this is not something seen every day. I saw the beetles visit a number of flowers in the wild and I have now seen this on several occasions including on a plant growing in my greenhouse.


Peristeranthus hillii
Gympie, Qld

The two close-up photos were taken in my greenhouse, so I observed the process up close and in great detail. I saw the beetles with pollen on its head and placing it on the stigmatic cavity of the flower. The *in situ* images were taken only 20 minutes from my home.

I hope these observations will be of interest to those who study our native orchids and their potential pollinators. ■

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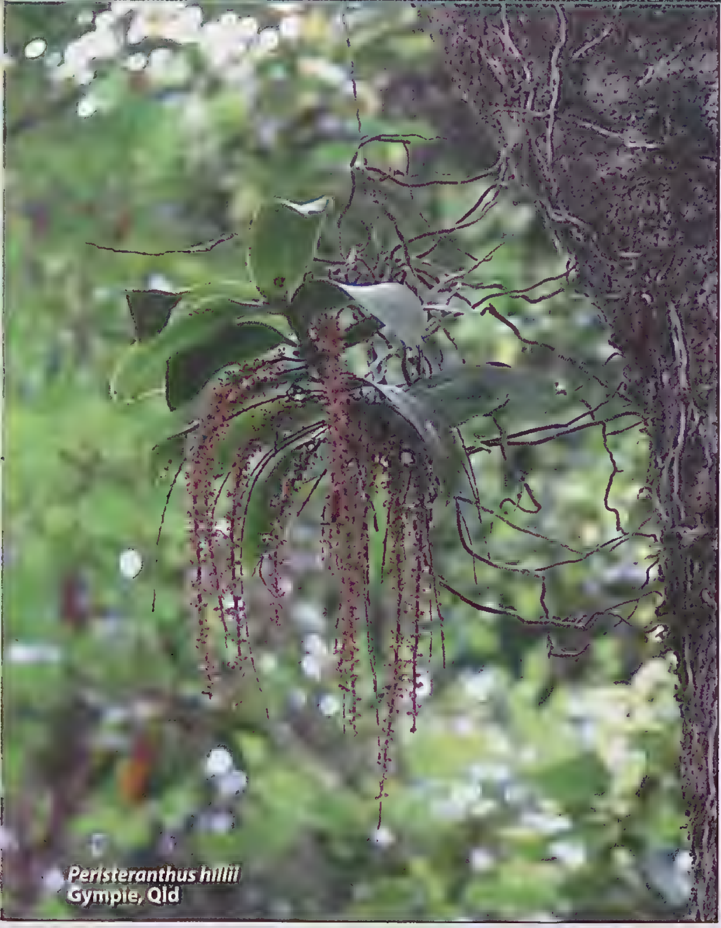
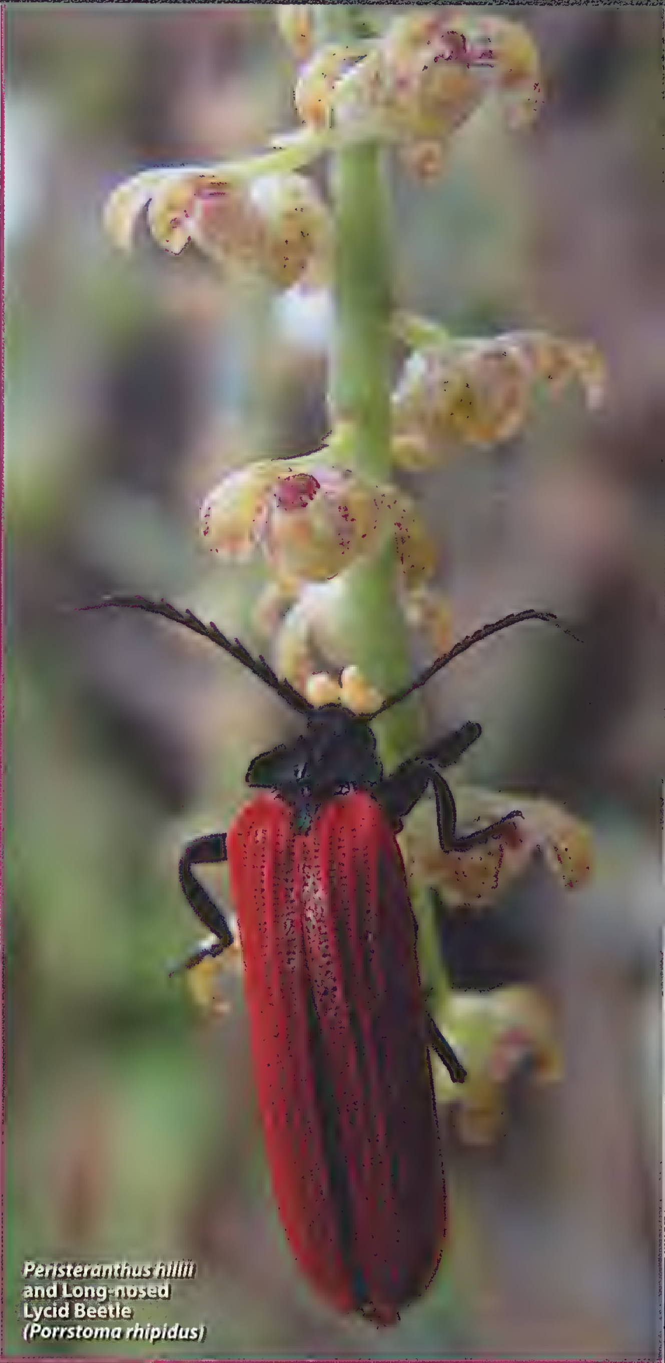
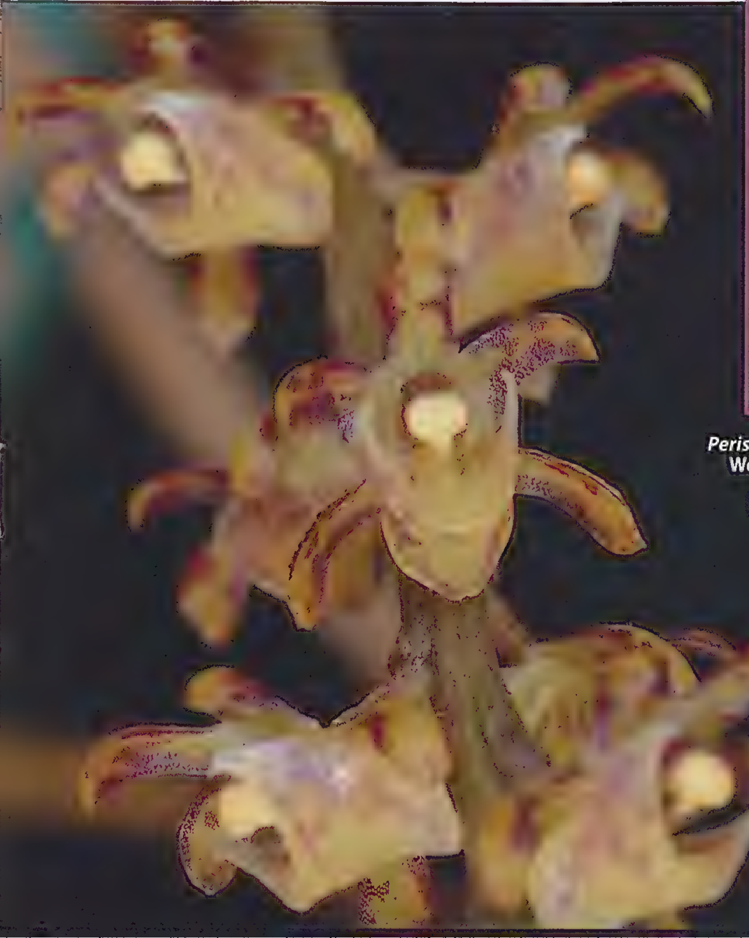


Peristeranthus hillii
Gympie, Qld



Peristeranthus hillii
and Long-nosed Lycid Beetle
(Porrstoma rhipidus)



Peristeranthus hillii
Woodburn, NSW
(photo: DPB)

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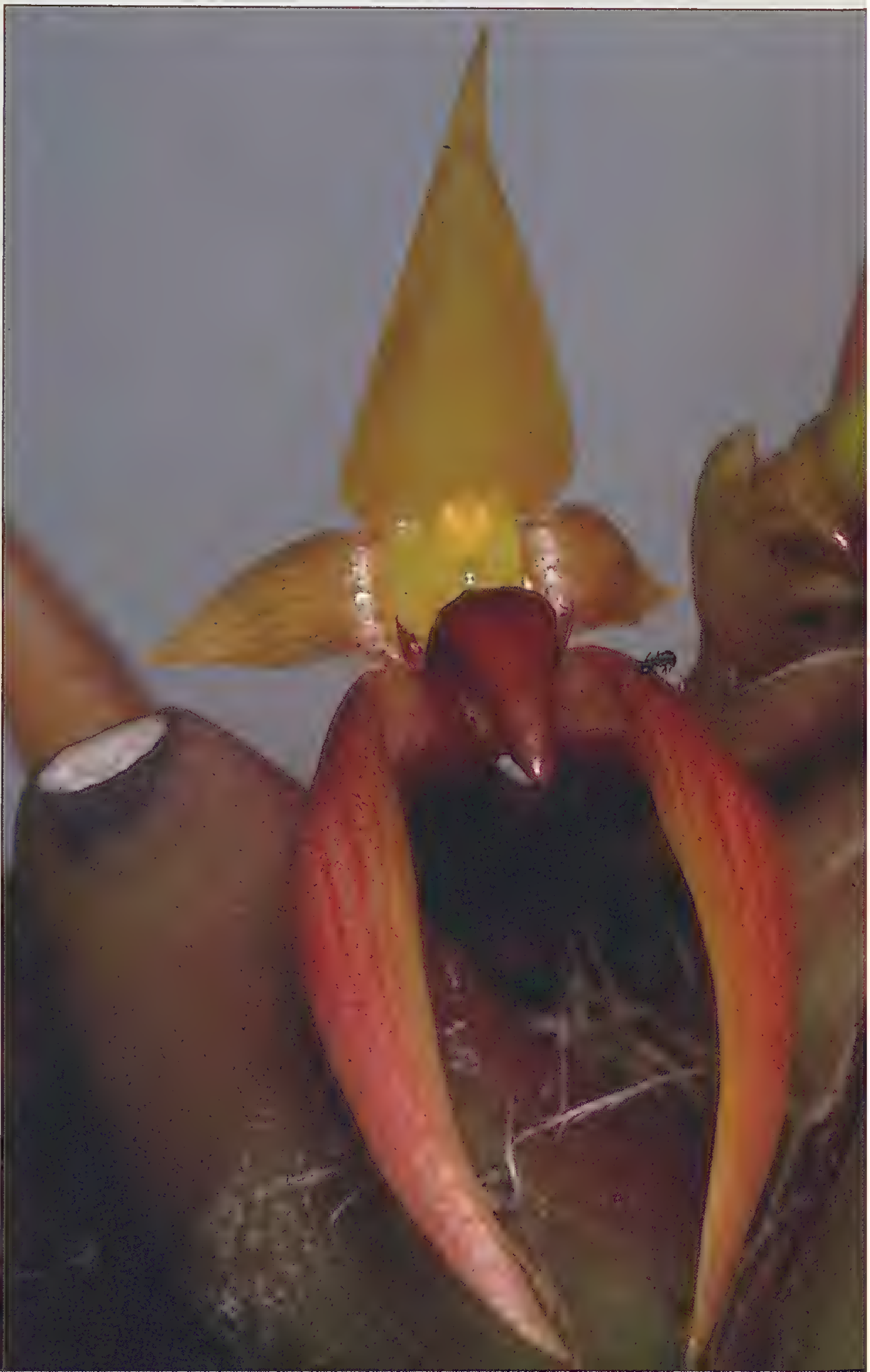
AOR 111

Some *Bulbophyllum* and related orchid genera used for DNA research at the Centre for Australian National Biodiversity Research in Canberra, ACT.

Text and photos by Mark A. Clements

At the Centre for Australian National Biodiversity Research in Canberra, we have an extensive live orchid collection in a number of glasshouses which are cultivated and used in our DNA studies. This is in conjunction with the Australian National Herbarium. The following is just a snapshot of some of the diverse and interesting species orchids from the complex genus *Bulbophyllum* as well as related genera that we have bloomed over the past 12 months or so.

This DNA research will provide us with a better understanding of the natural relationships between similar species and related genera.



▶ ***Bulbophyllum basisetum***

– section *Lepidorhiza*, one of a group of similar species from the Philippines. This is an interesting group with large attractive flowers but all emit a terrible sickly odour when in flower. Intermediate to warm growing.

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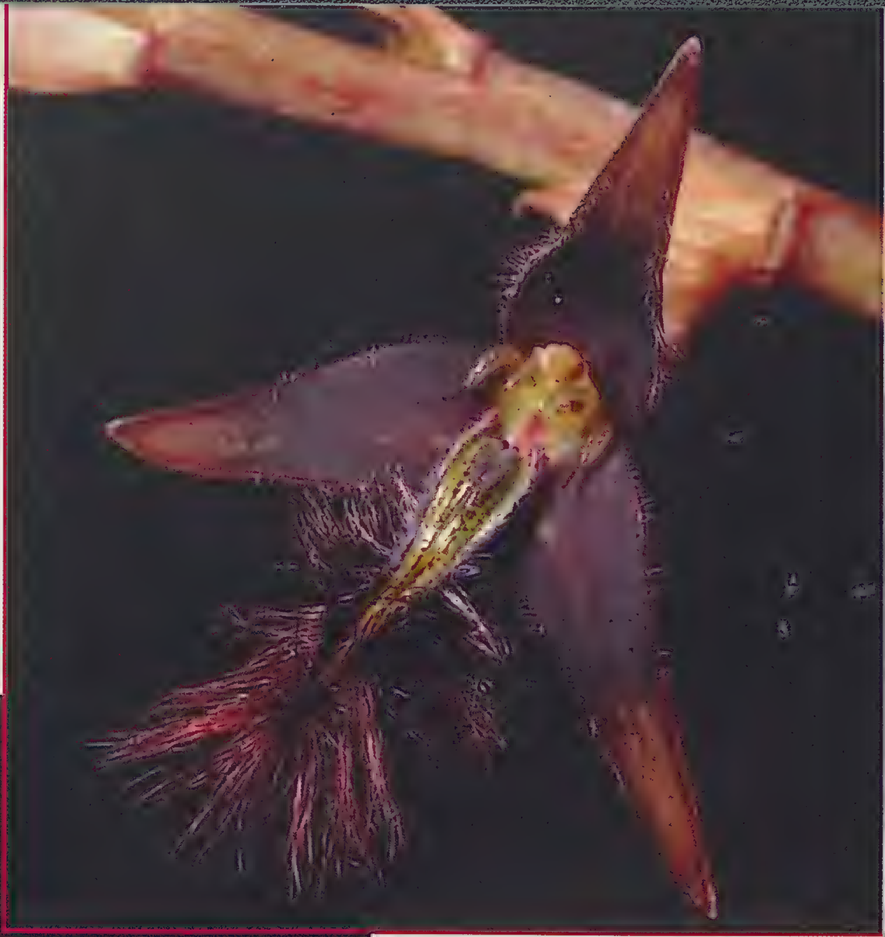
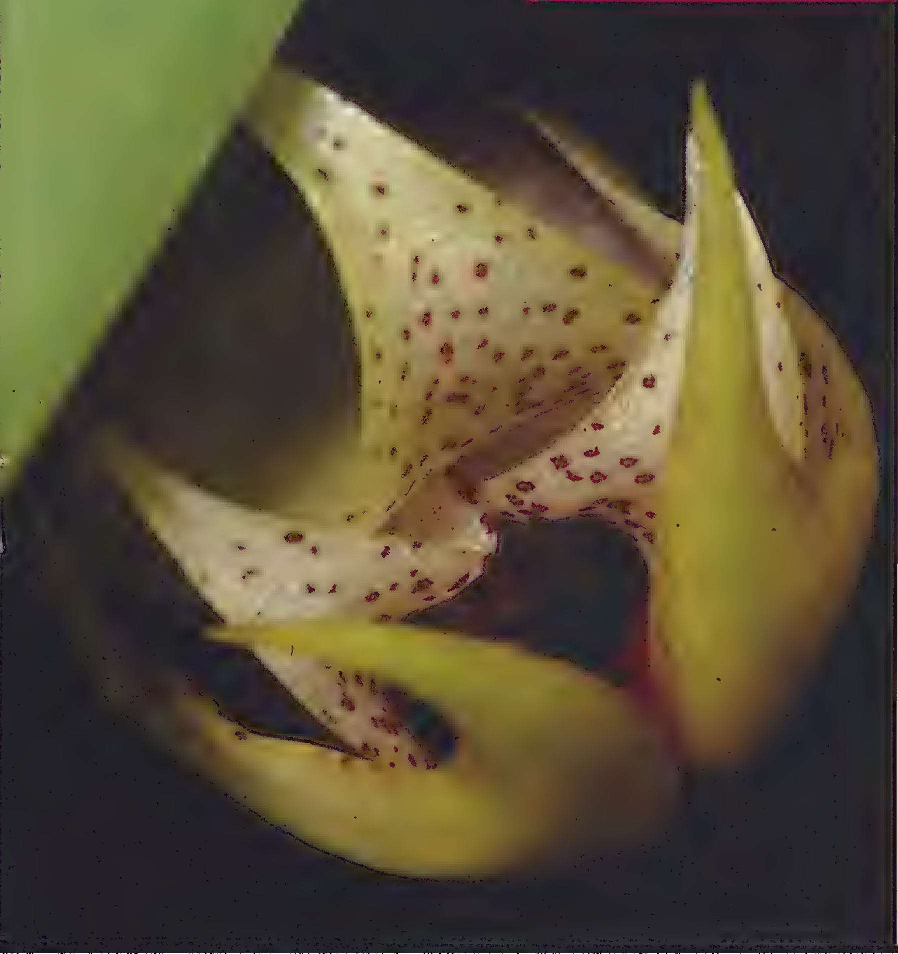
▶ *Bulbophyllum calamarium*

– from West Africa. The flowers are small and open sequentially along the peduncle, with the most bizarre labellum. Rare in Australian collections. Warm growing.

▼ *Bulbophyllum emiliorum*

– from Misima Island, Papau New Guinea. This species has the habit of the Australian *Bulbophyllum baileyi* but unlike that species the sweet-smelling flower is quite unique where the sepals and petals form a chamber with small frontal opening covering the labellum. Originally from the Darryl Smedley collection. Warm growing.





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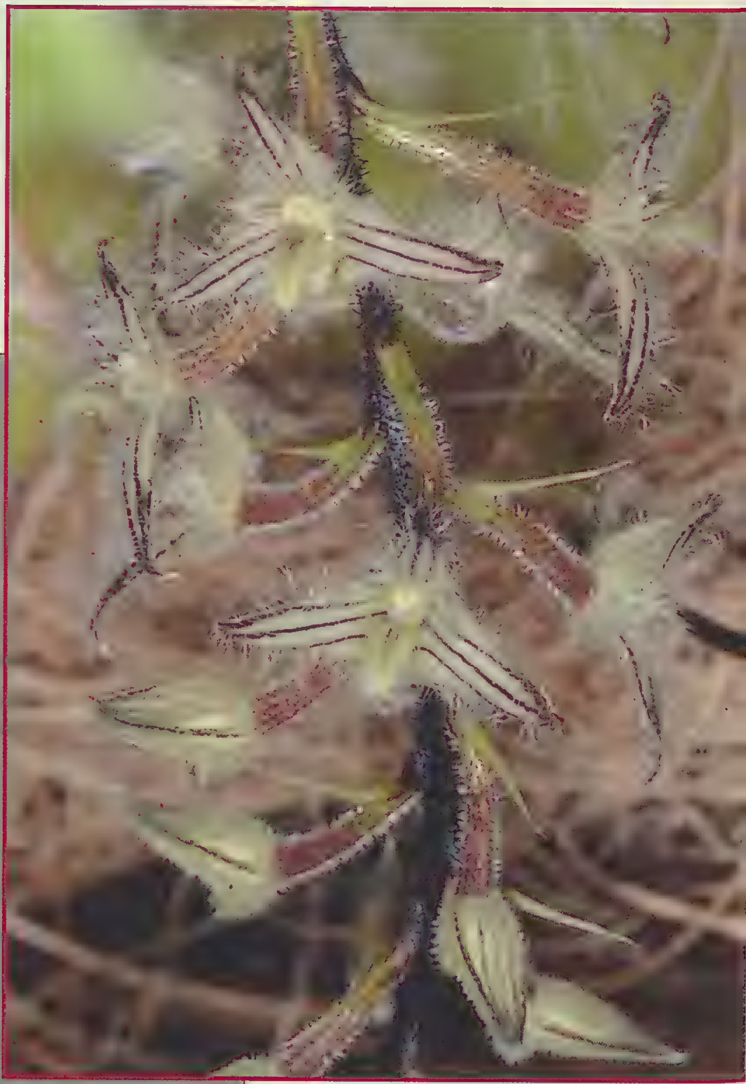
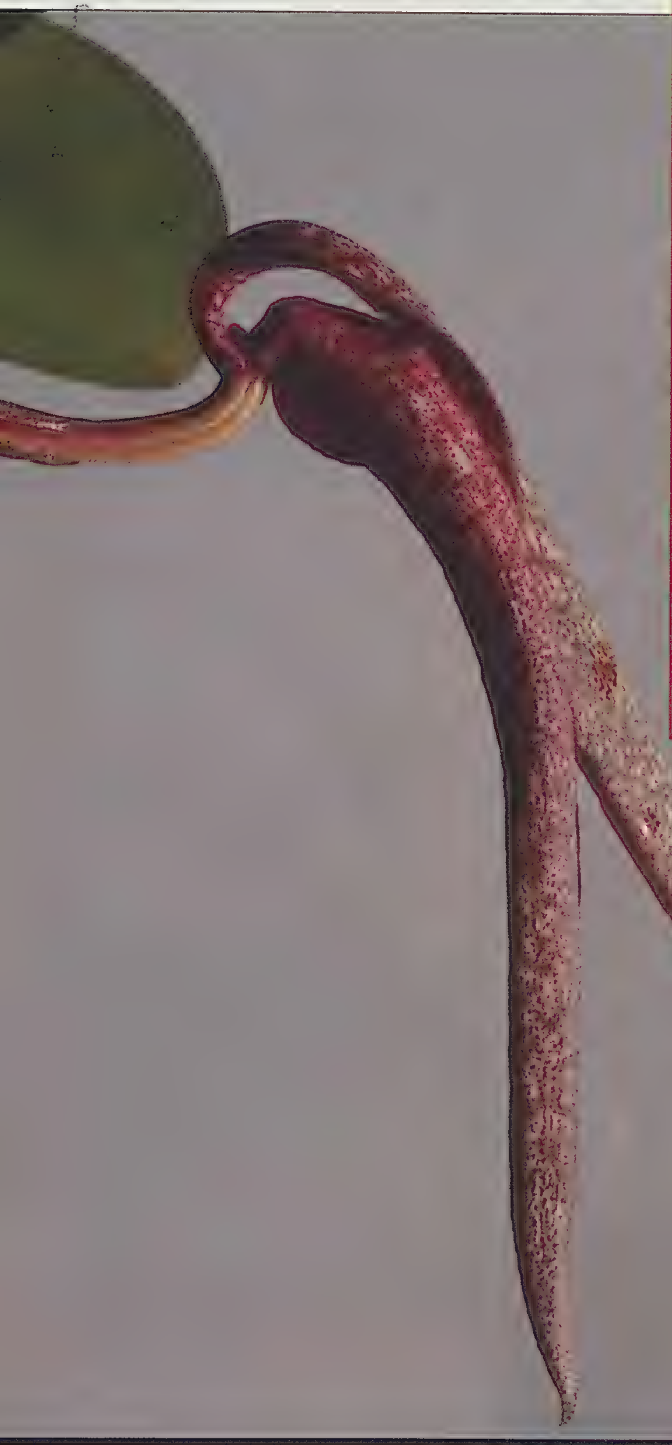
▶ *Bulbophyllum lindleyanum*

– from India through to Thailand. The plant produces a long thin inflorescence with striped flowers covered in hairs, on the front and back of the bloom. A most interesting species. Intermediate growing.

▼ *Bulbophyllum longisepalum*

– another species from Papua New Guinea. The solitary flower seems barely open when fully in flower hiding the labellum and highly reduced petals. Warm growing.





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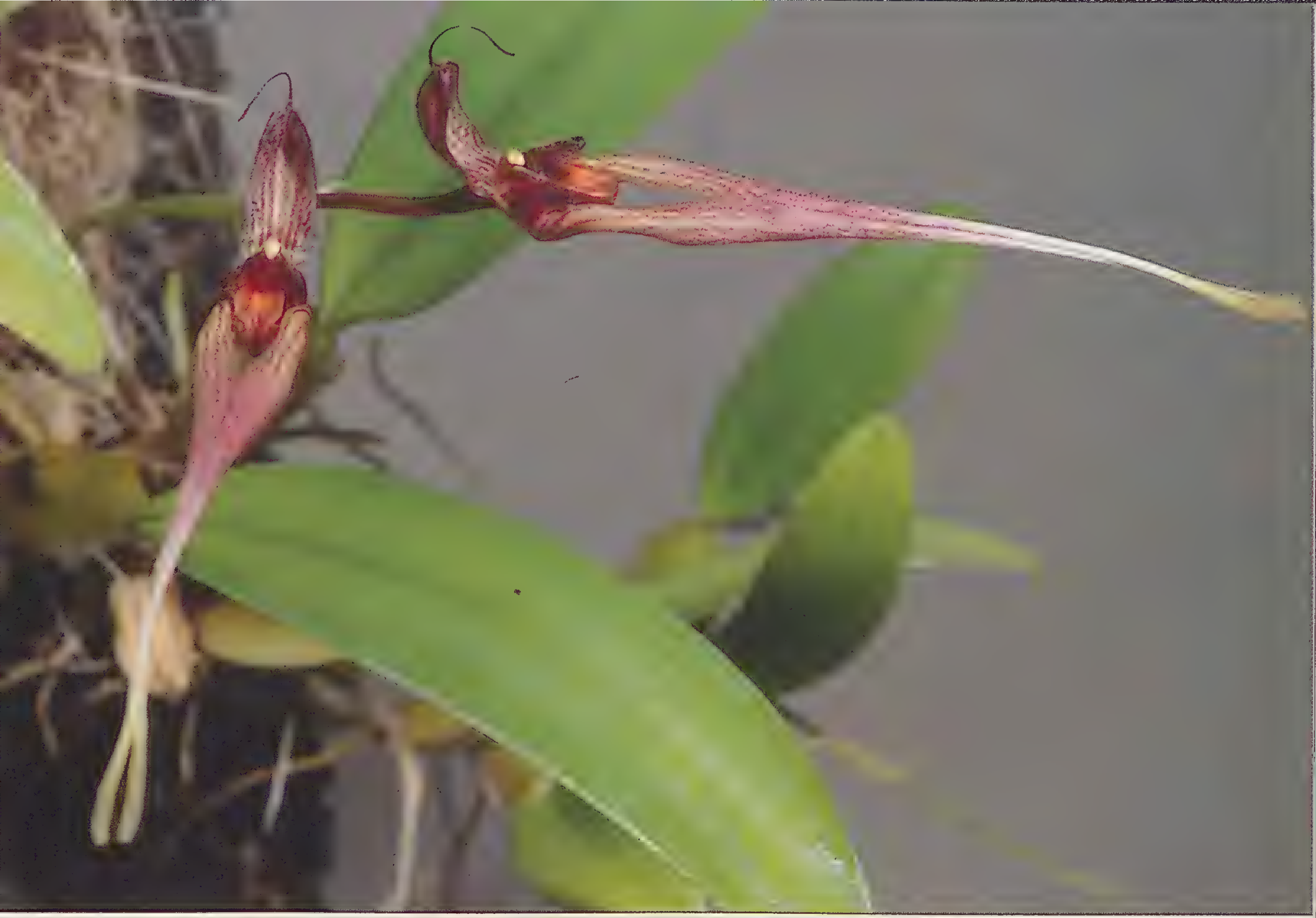

▲*Cirrhopetalum biflorum*
– with its characteristic twin-flowered inflorescence. Another species that emits a terrible odour when in flower, being fly pollinated. Intermediate to warm growing.

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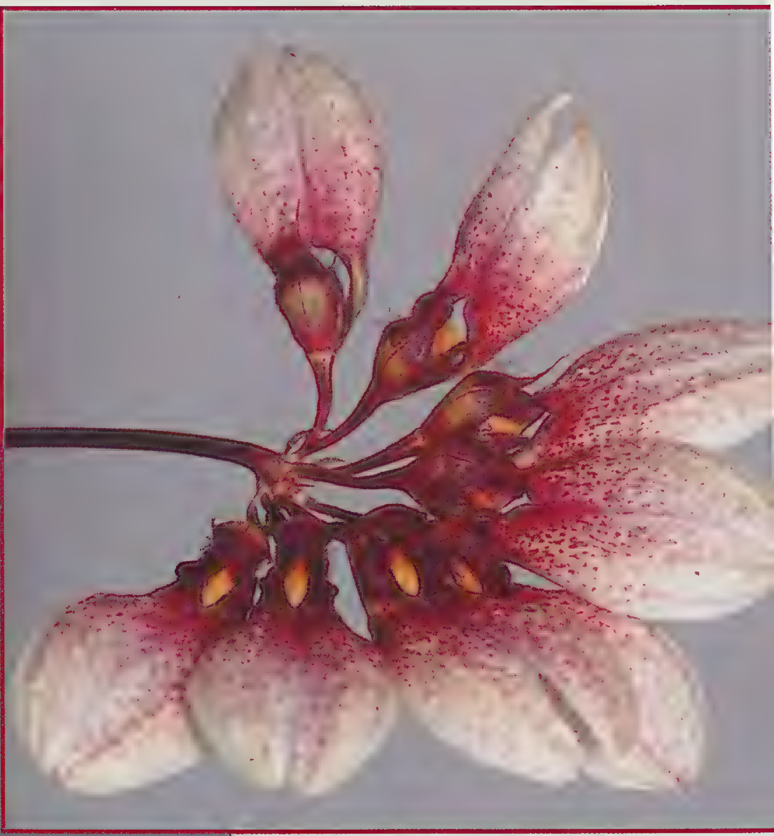
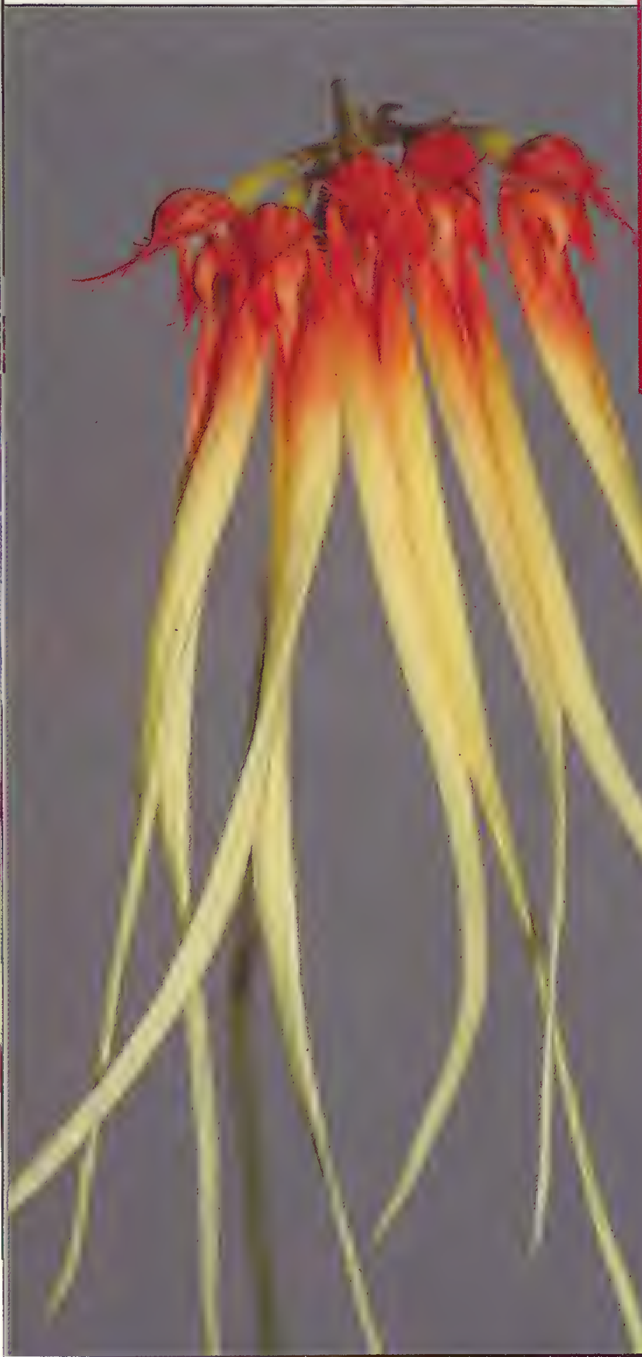
▶ ***Cirrhopetalum flabellum-veneris***

– Malaysia. One of a number of species from this interesting genus. The species was previously well known under the name *Cirrhopetalum* or *Bulbophyllum lepidum*. Intermediate to warm growing.



▼ ***Cirrhopetalum hirundinis***

– Vietnam and Taiwan. This miniature species has quite large blooms considering the plant size. It has a wonderful contrasting colour combination. Intermediate growing.



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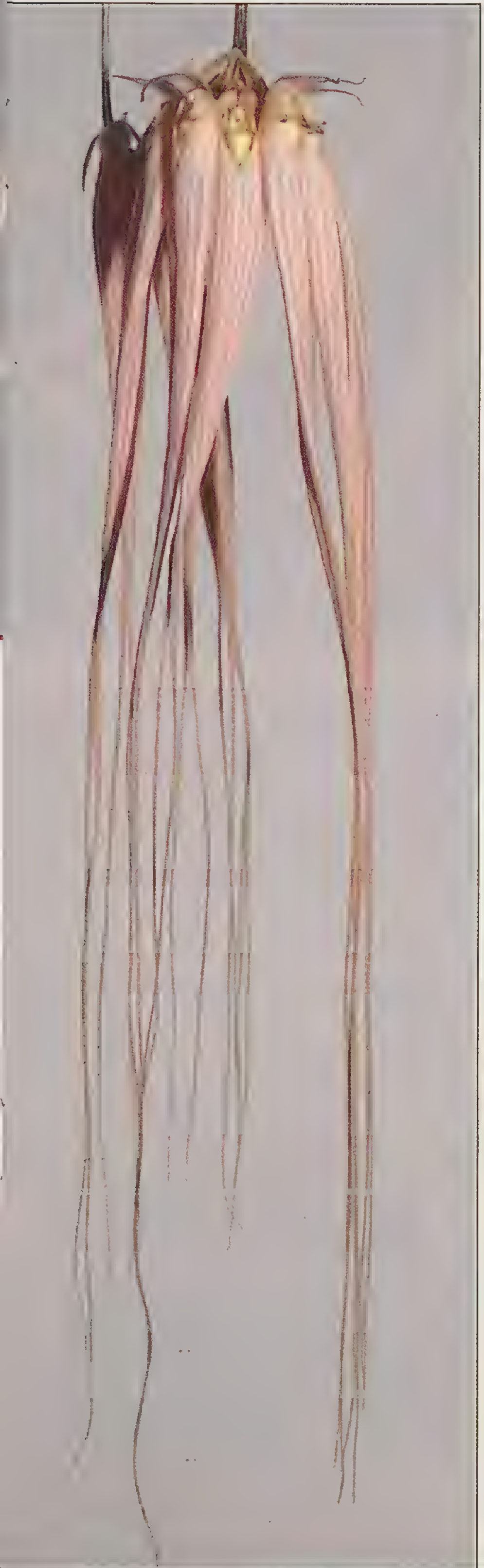
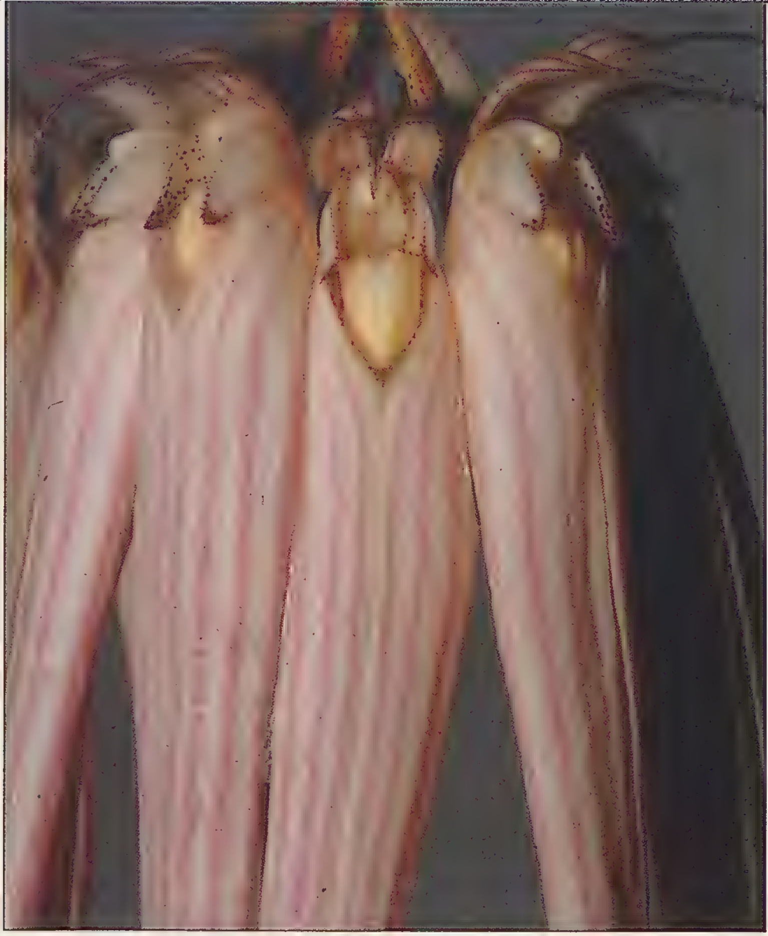
▼▶ ***Cirrhopetalum longissimum*** – a stunning species from the Thai Peninsula. On this particular plant the flowers were 28cm long. This plant was from the Gerald McCraith collection. Intermediate to warm growing.





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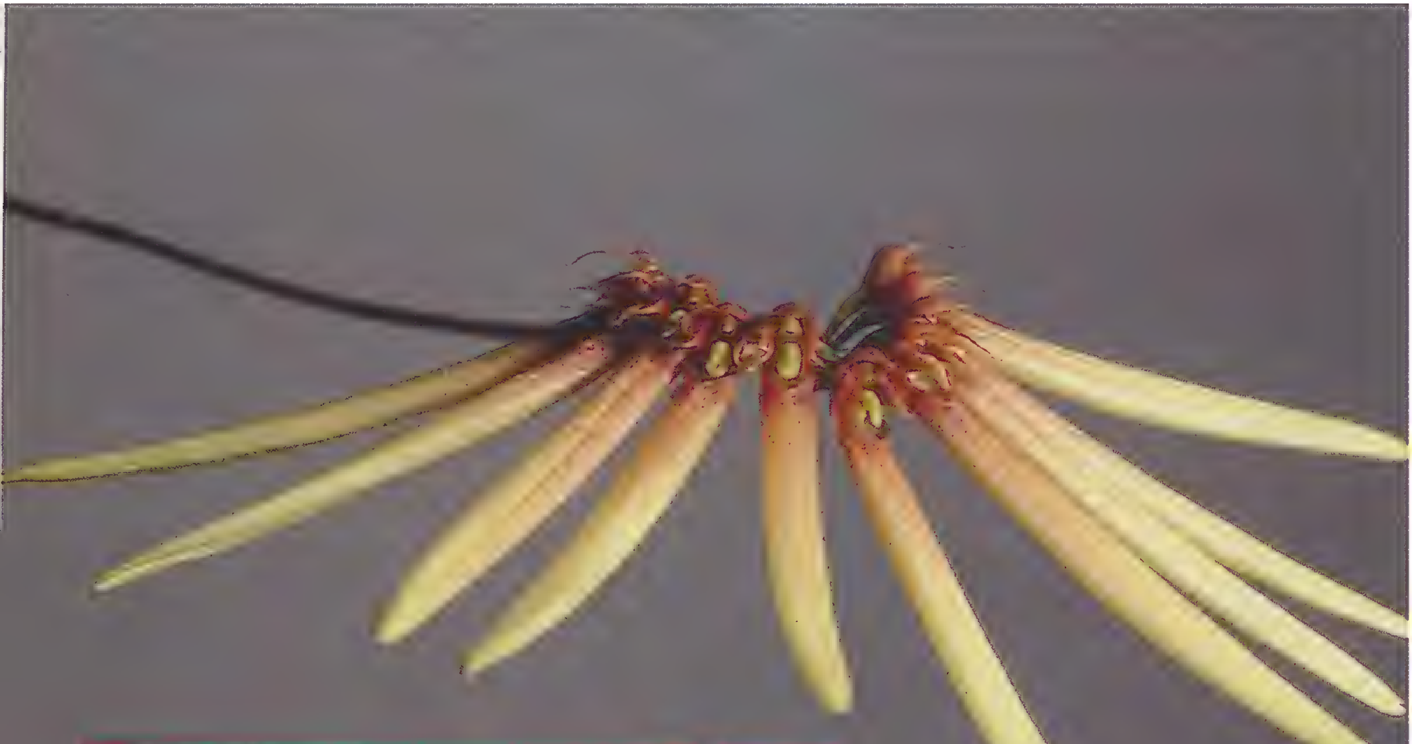

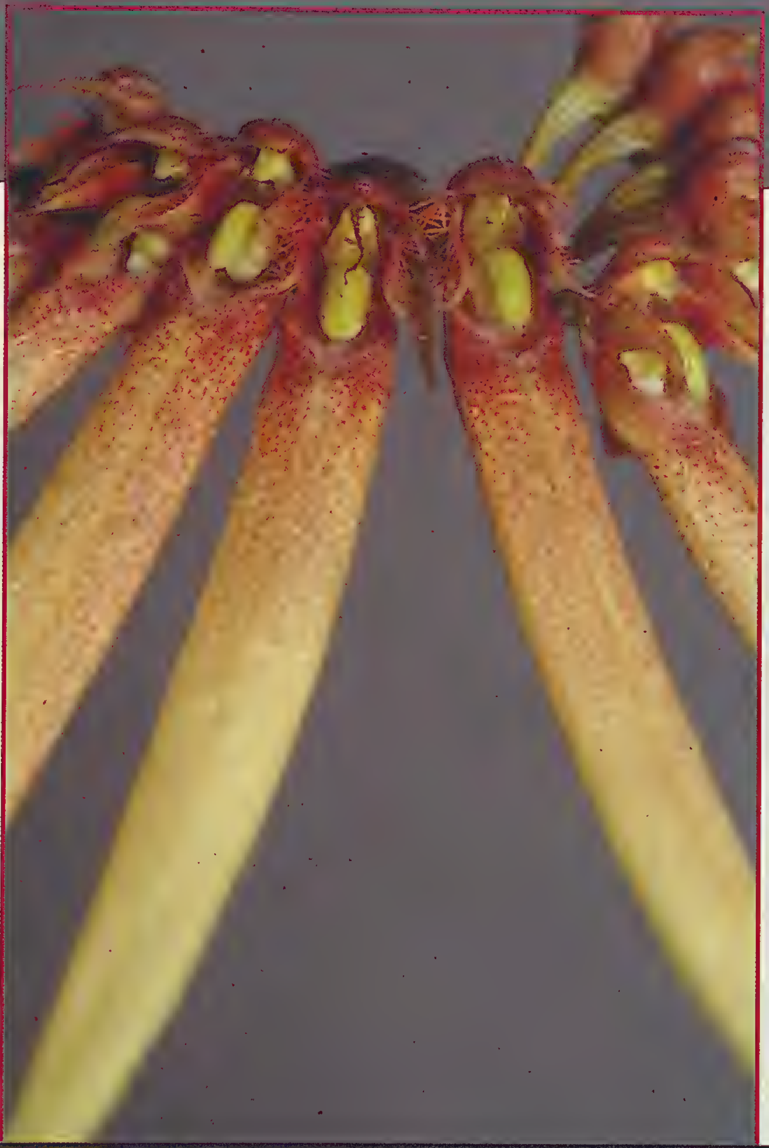

◀ ▲ *Cirrhopetalum makoyanum* – another lovely smaller flowered species from Borneo, the Philippines and surrounds. Like spokes on a bicycle wheel. Intermediate to warm growing.

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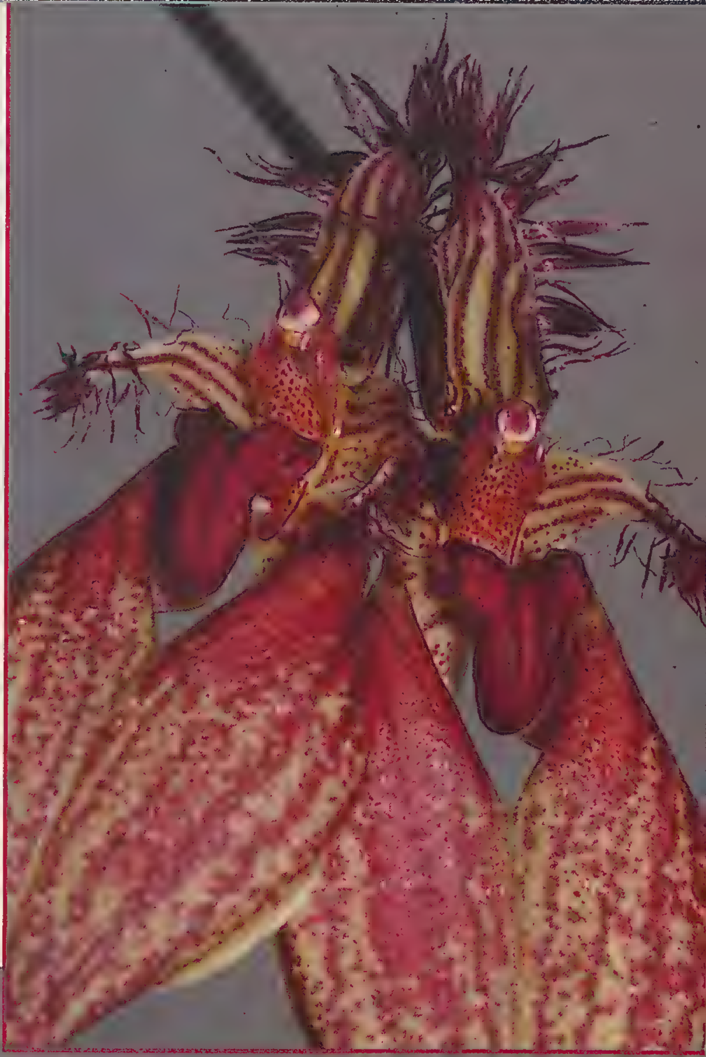
▶ *Cirrhopetalum rothschildianum*

– a spectacular and easily grown large flowered species from India. From David Banks (Hills District Orchids) collection. Cool to intermediate growing.



▼ *Megaclinium scaberulum*

– from South Africa. This unusual species has a distinctive growth habit with two-leaves. Was well known as *Bulbophyllum scaberulum*. Cool to warm growing.

(Mark Clements is currently employed as a Research Scientist at the Department of Environment, Centre for Australian National Biodiversity Research in Canberra, and has been there since 1996. His main research interests include phylogeny, systematic and reproductive biology of Orchidaceae with a special interest in the Australasian-Malaysian-Melanesia region. Mark has written or co-written almost 200 scientific papers and articles, in various publications in Australia and overseas. In 2013 he authored the book ***The Allure of Orchids***.) ■

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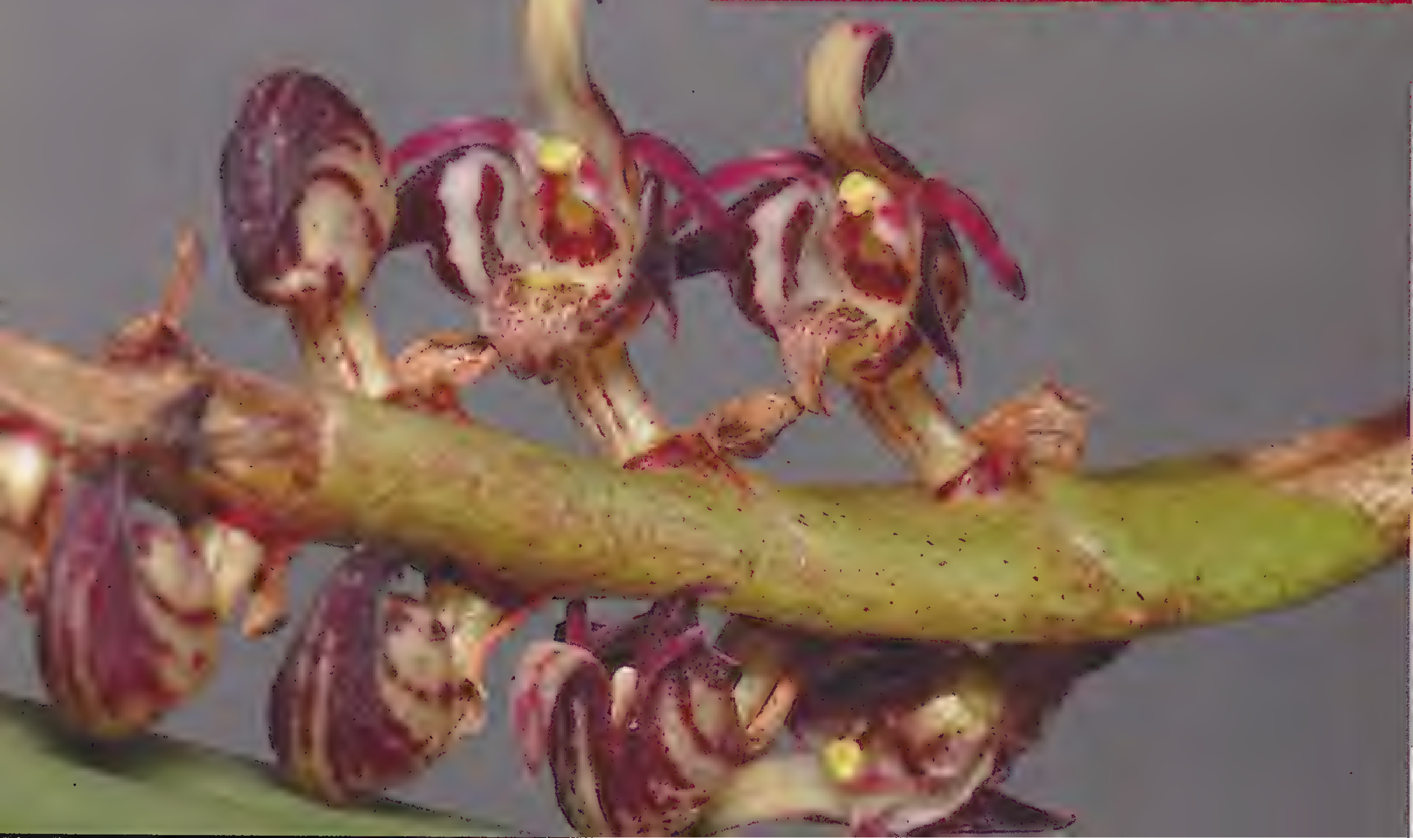

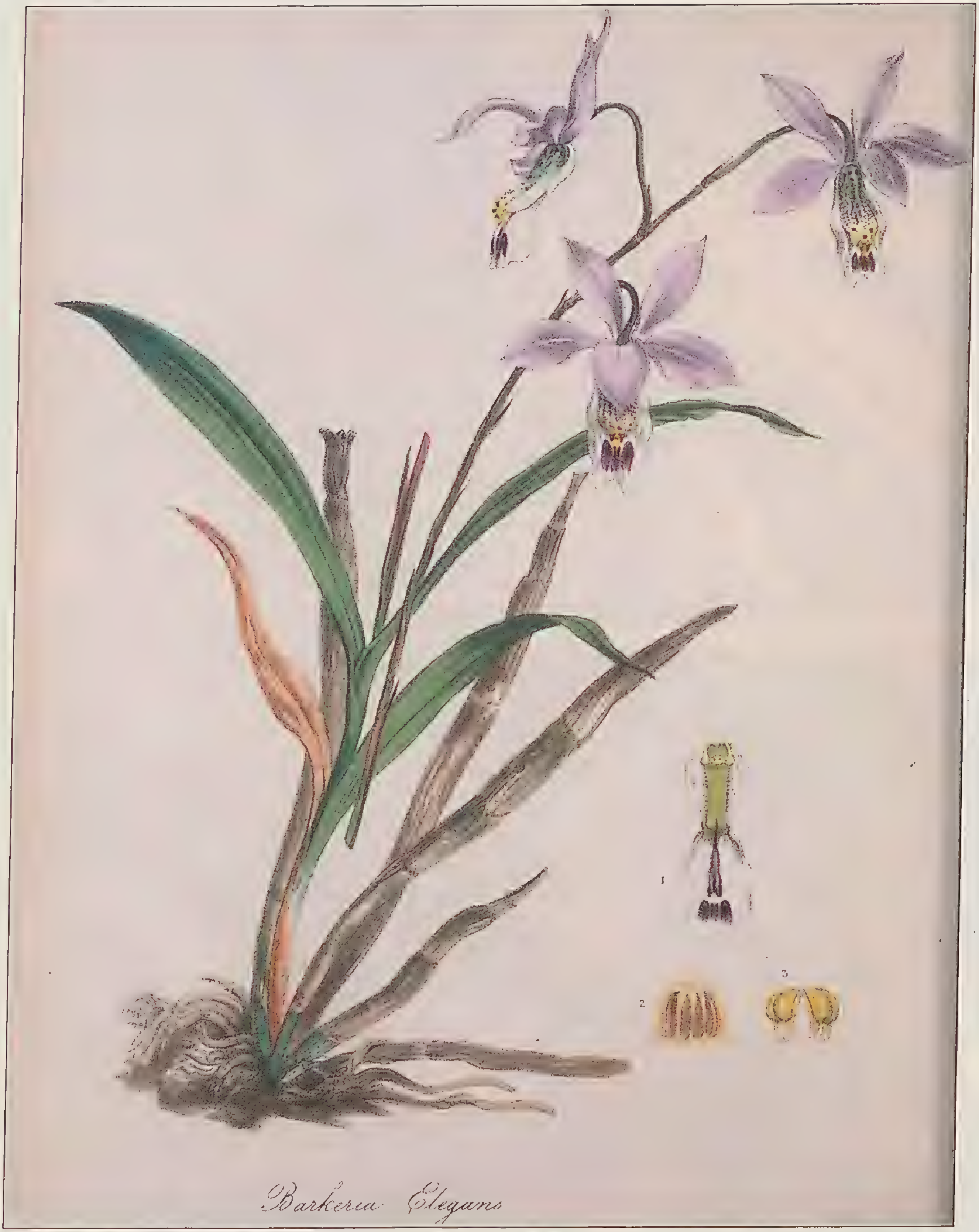

Barkeria uniflora as *Barkeria elegans* from Volume 2 of the *Floral Cabinet*, 1837. This genus is named after George Barker who first bloomed a *Nemaconia* species in cultivation.

Nemaconia glomerata and Donovan (Don) Stewart Correll

by Rudolf Jenny

Nemaconia glomerata (D.S.Correll) M.A.Soto, G.Salazar & C van den Berg, *Neodiversity* (2007) 2:8.

Syn. *Ponera glomerata* D.S.Correll, *Botanical Museum Leaflets Harvard University* (1941) **9**(8):132.

From 1837 to 1840, George Beauchamp Knowles and Frederic Westcott published the three volumes of *The Floral Cabinet and Magazine of Exotic Botany*, each of them in 12 parts and with a number of hand-coloured plates. In Volume 2 of 1838, the new genus *Nemaconia* with its type species *Nemaconia graminifolia* described (but not illustrated). The plant was collected in 1837 in Mexico and flowered in the collection of George Barker (1776 – 1845) of Springfield near Birmingham, England. The genus *Barkeria* was dedicated to George Barker by Knowles and Westcott, and was described and illustrated in *Floral Cabinet*. In 1941 Donovan Stewart Correll in *Botanical Museum Leaflets Harvard University* revised the genus *Ponera* Lindl., stating:

"In 1838, Knowles and Westcott proposed the genus *Nemaconia* based on *N. graminifolia*. This species is apparently the same as *Ponera juncifolia*. Lindley recognised the genus *Nemaconia* as congeneric with *Ponera* and in 1839 he combined them."

In his paper, Correll described *Ponera glomerata* as a new species. The plant was found in Mexico and Guatemala. The type material had been collected by Otto Nagel in April 1936 in Chiapas, Mexico. The drawing of the plant was made by Gordon W. Dillon.

In 2007 Miguel Angel Soto-Arenas, Gerardo Salazar and Cassio van den Berg reactivated in *Neodiversity* the old genus *Nemaconia* and recombined some *Ponera* species to *Nemaconia* in order to keep *Ponera* monophyletic (all species originating from a single ancestor). So *Ponera glomerata* D.S.Correll became *Nemaconia glomerata* (D.S.Correll) M.A.Soto, G.Salazar & C van den Berg. Following *Genera Orchidacearum* the genus *Nemaconia* is today accepted as its own genus with 7 or 8 species.

Donovan (Don) Stewart Correll was born on 13th April 1908 in Wilson, North Carolina. Before he went to Duke University, he spent one year in Florida on various jobs and took two years voice lessons. He sang solos at church and on radio. From Duke University he was awarded the Bachelor of Arts in 1934, the Master of Arts in 1936 and his PhD in botany in 1939. For his PhD thesis he worked with Oakes AMES at Harvard, its title was "Orchids of the Southeastern United States".

From 1939 to 1943 Don was research associate at the Botanical Museum of Harvard University. In 1942 he received a Milton Fund grant from Harvard and in 1943 he worked as botanist on the Alaska Highway Botanical-Geological Survey. During the war he served as a gunnery officer in the navy; then he returned to Harvard with a Guggenheim Memorial Fellowship until 1947. From 1947 to 1955 he worked in several positions in the Specialty Crop Introductions Group of the Division of Plant Exploration and Introduction at the Bureau of Plant Industry, Soils, and Agricultural Engineering (BPISAE).

Donovan Stewart Correll in the field, 1955

Between 1947 and 1958 Don travelled widely in Central and South America, mainly in search of wild potatoes; he also collected other plants. In 1956 he became head of the Botany Department of the Texas Research Foundation in Renner. In 1962 he finished the monumental work "The Potato and its wild relatives: Section *Tuberarium* of the genus *Solanum*". Together with his wife Dr. Helen B. Correll and Priscilla Fawcett, botanical artist of the Fairchild Garden, Don published in 1983 *Flora of the Bahama Archipelago, including the Turks and Caicos Islands*. Donovan Stewart Correll died after a month-long illness on 28th March 1983, aged 74.

Ruben Sauleda, Carl Withner, Donovan Stewart Correll and Pat Withner starting on a field trip

In addition to his professional duties, Don published a series of papers and books about orchids; the following is just a selection:

- A new Status for x *Habenaria andrewsii* (*Botanical Museum Leaflets*, Harvard University), 1939
- Nomenclature of the American species of *Corymborchis* (*Botanical Museum Leaflets*, Harvard University), 1940
- The genus *Palmorchis* (with Ch. Schweinfurth, (*Botanical Museum Leaflets*, Harvard University), 1940
- Studies in *Isochilus*, Mormodes and Hexalectris (*Botanical Museum Leaflets*, Harvard University), 1941
- Studies in *Habenaria* and *Dichaea* (with O. Ames, *Botanical Museum Leaflets*, Harvard University), 1943
- Some revisions of American Orchids: 1. Novelties and nomenclatural changes (*Lloydia*), 1947
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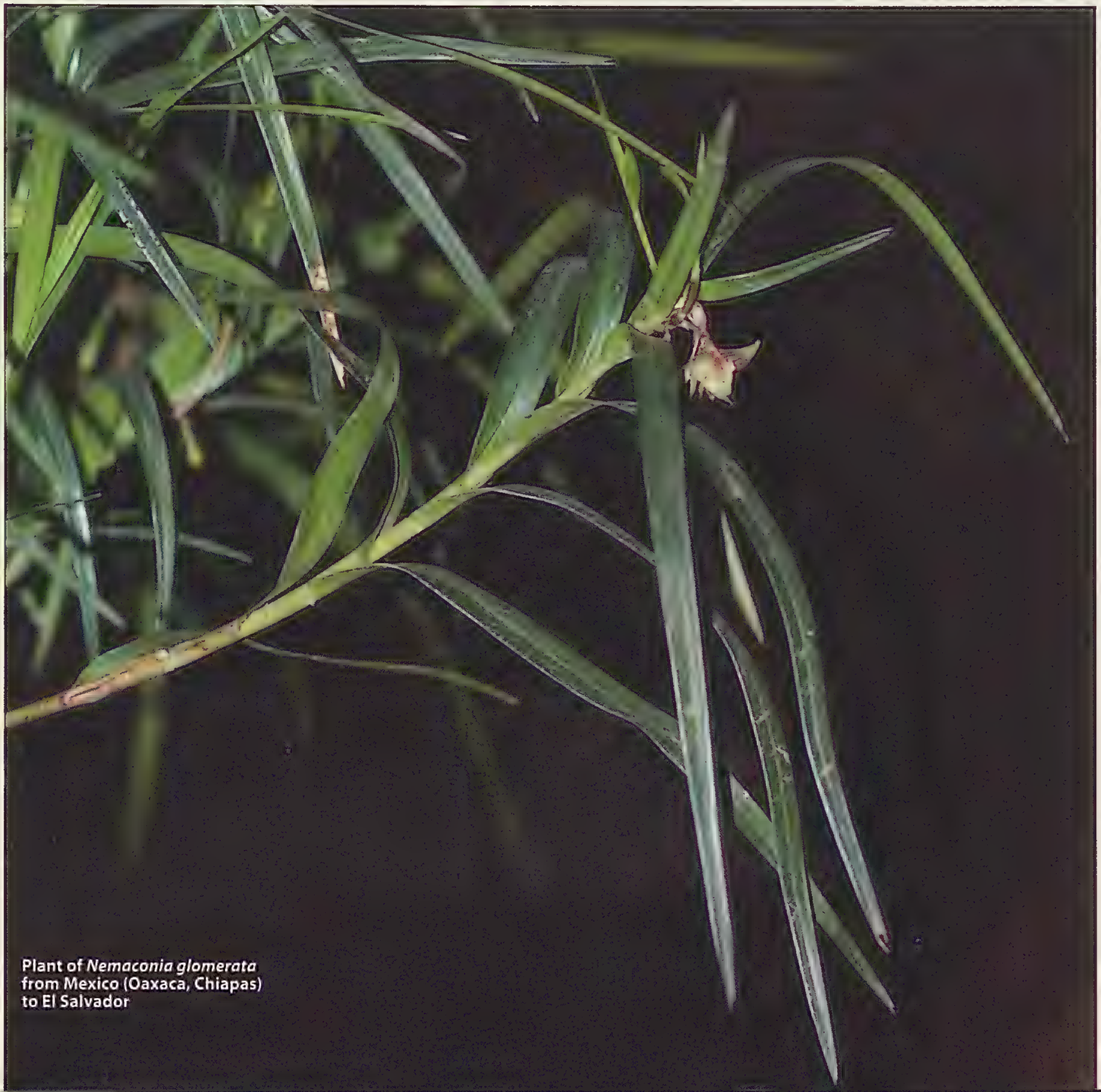
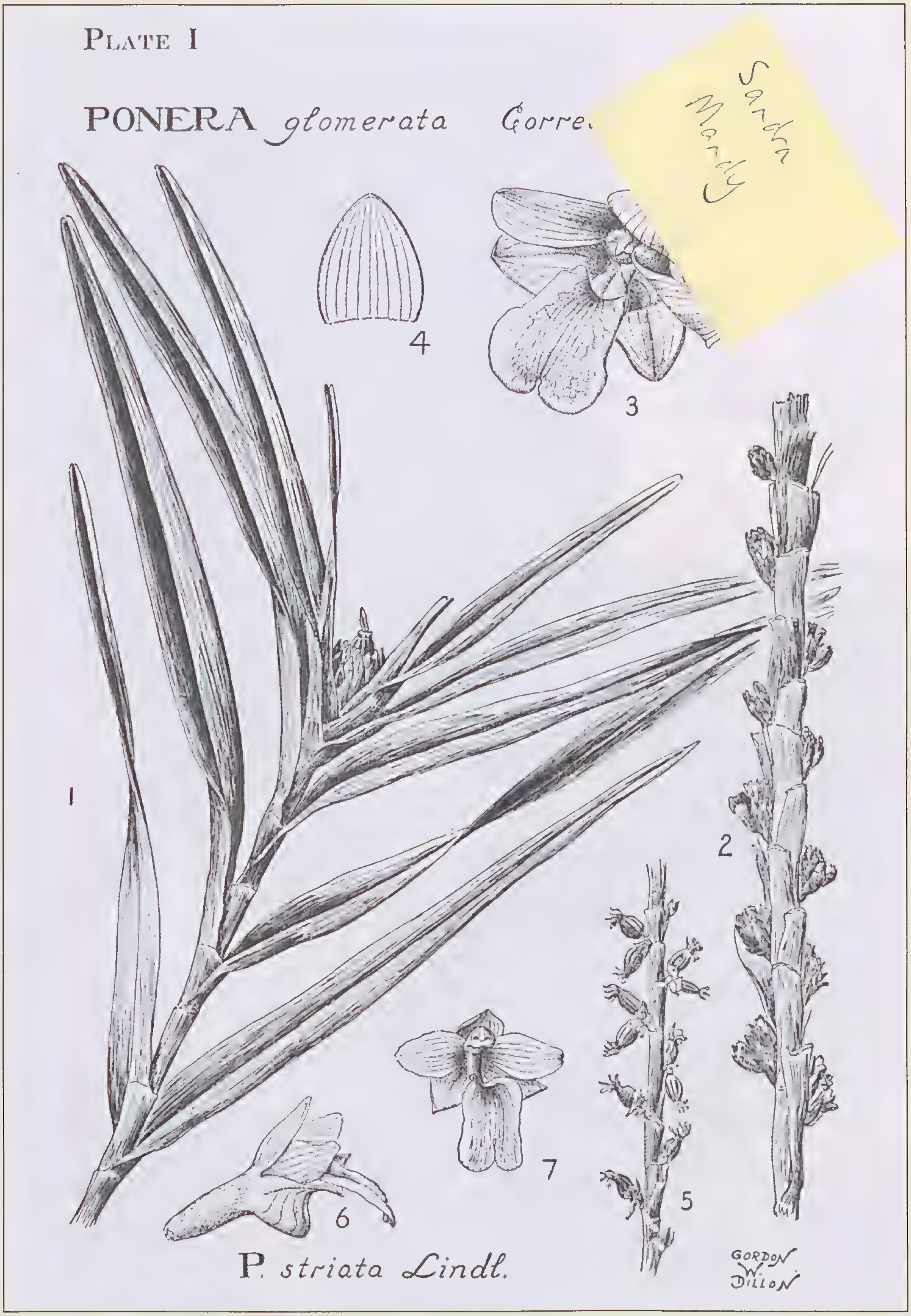
- *Native Orchids of North America - North of Mexico*, 1950 and 1978
- *Orchids of Guatemala* (with Oakes Ames) in 2 volumes, 1952 and 1953
- *Vanilla:* Its botany, history, cultivation and economic importance (*Economic Botany*), 1953.

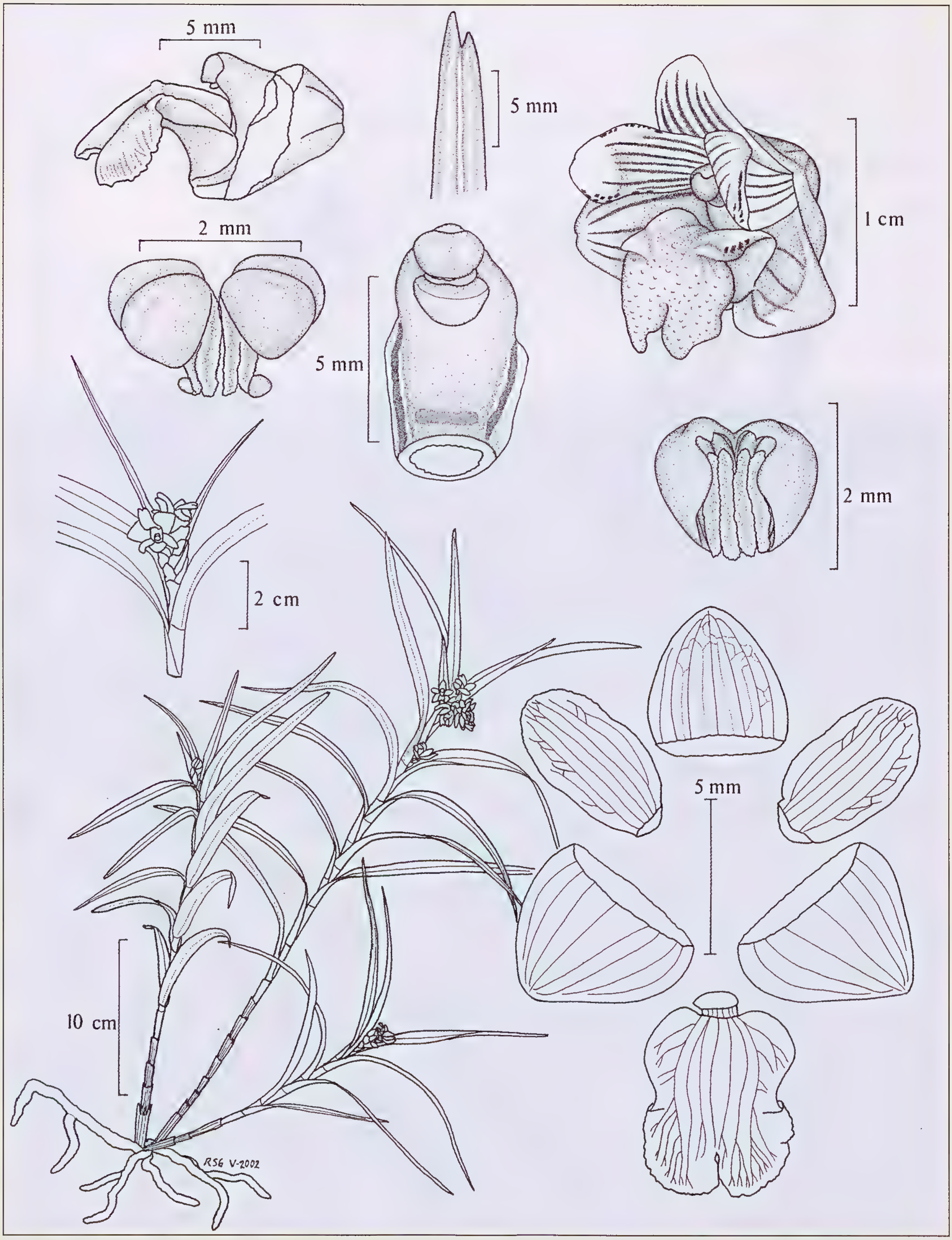
Don also wrote a number of papers about orchids for the *American Orchid Society Bulletin*, he became an honorary member of the AOS (American Orchid Society). The Native Plant Society of Texas continues to annually award the Donovan Stewart Correll Memorial Award for scientific work on the flora of the state of Texas, USA.



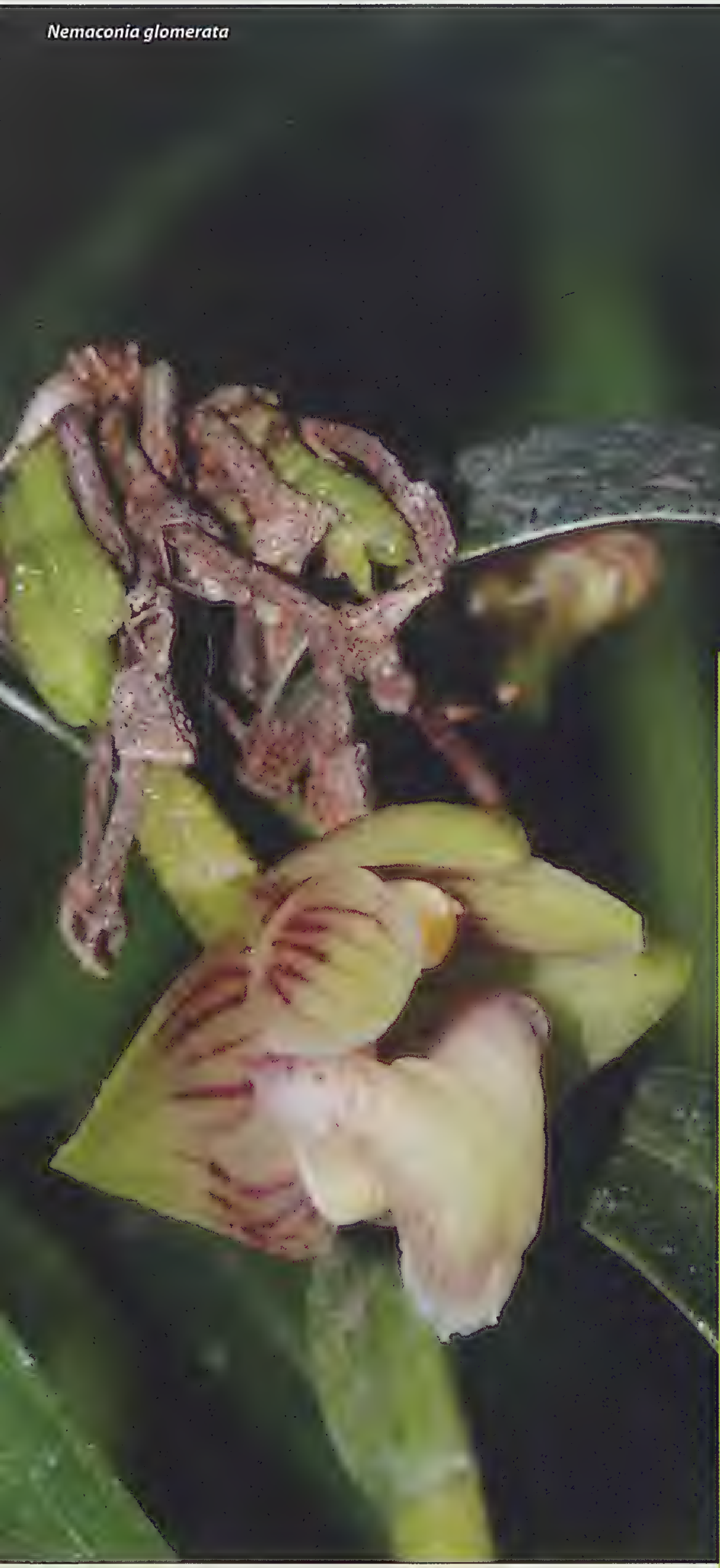
Plant of *Nemaconia glomerata* from Mexico (Oaxaca, Chiapas) to El Salvador



Drawing of *Nemaconia glomerata* as *Ponera glomerata* by Gordon W. Dillon from *Botanical Museum Leaflets*, 1941



Drawing of *Nemaconia glomerata* as *Ponera glomerata* by R. Solano from *Icones Orchidacearum*, 2002 (courtesy of Eric Hagsater)



Nemaconia glomerata

Literature:

- Correll, D.S. (1941) *Botanical Museum Leaflets Harvard University* **9**(8):129 – 151 & t.1
- Knowles, G.B. & F.Westcott (1838) *Floral Cabinet* **2**:127
- Schubert, B.C. (1984) *Economic Botany* **38**:134 – 136
- Soto, M.A. (2002) *Icones Orchidacearum* **5-6**:t.644
- Soto, M.A., G.Salazar & C van den Berg (2007) *Neodiversity* **2**:7 - 9

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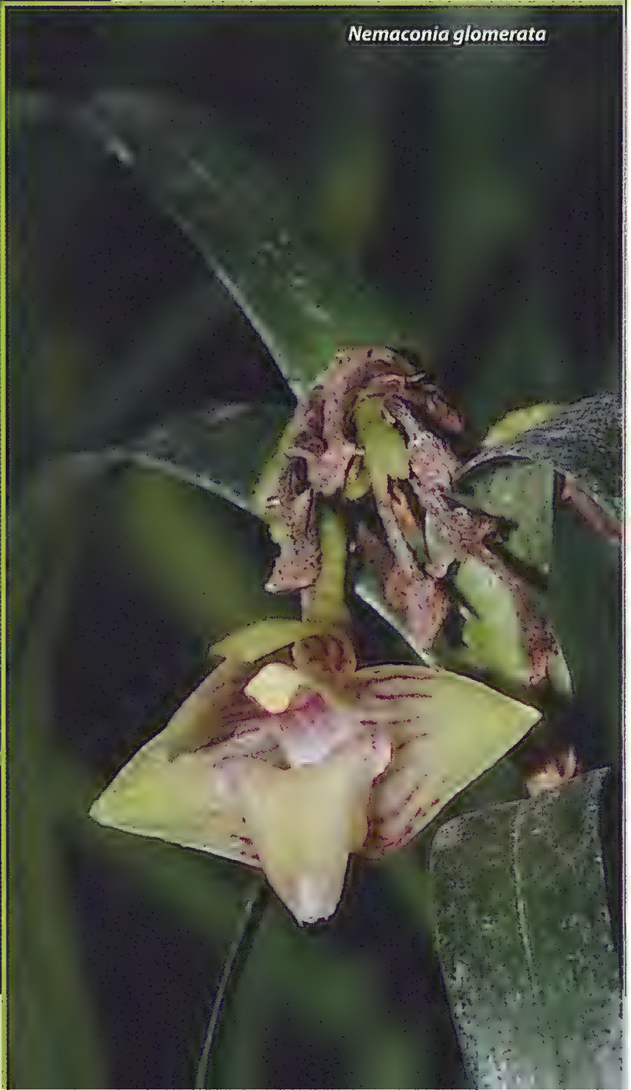
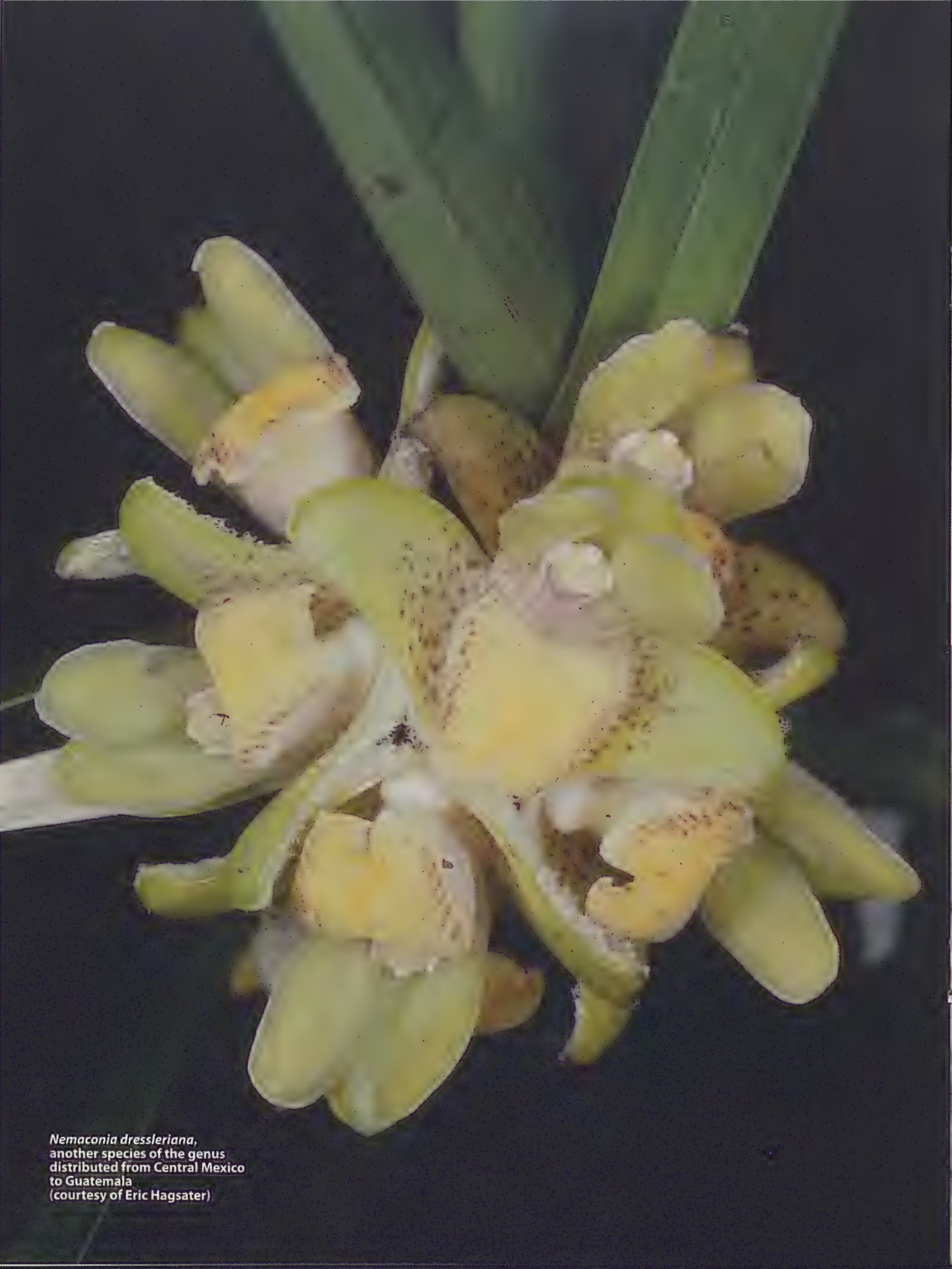


Nemaconia glomerata



Nemaconia dressleriana, another species of the genus distributed from Central Mexico to Guatemala (courtesy of Eric Hagsater)

Two New Morphologically Distinct species of *Chiloglottis* R.Br. (Orchidaceae: Drakaeinae) from South-eastern Australia

by David L. Jones

Abstract

Two species of *Chiloglottis*, *Chiloglottis curviclavia* in Section *Chiloglottis* and *Chiloglottis bifaria*, in Section *Simpliglottis*, are described here as new based on differences in morphology and biology. Each new species is compared and contrasted to similar taxa and notes are provided on their distribution, habitat, etymology and conservation status. Details are also provided on pollinator specificity and floral chemistry.

Key Words

Orchidaceae, *Chiloglottis bifaria*, *Chiloglottis curviclavia*, pollination, new species, New South Wales, Victoria, South Australia, Australian flora.

Introduction

Studies into the fascinating, highly evolved, east-Australian genus *Chiloglottis* R.Br., have resulted in the description of 16 new species since 1987, all recognisable on morphological features (Jones & Clements 1987, Carr 1991, Jones 1991, 1997, 1998, 2006). Two new species are described here, both of which are morphologically and biologically distinct.

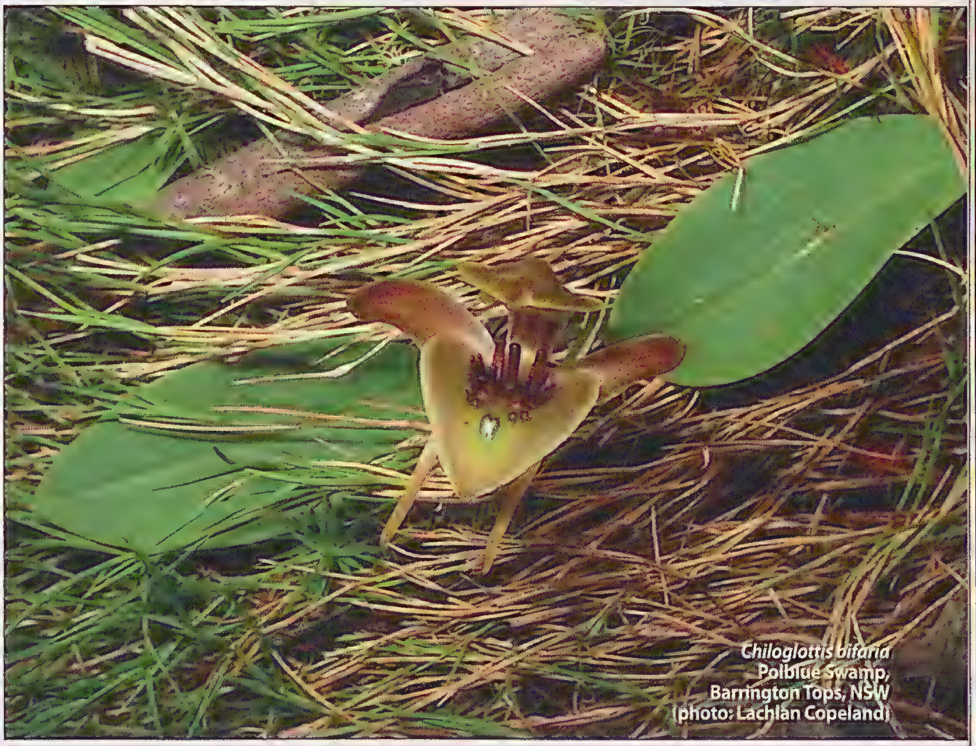
Materials and Methods

Descriptions of the new taxa were made from fresh specimens. Unless otherwise indicated, all types of *Chiloglottis* relevant to this study (or photographs thereof) have been seen by me.

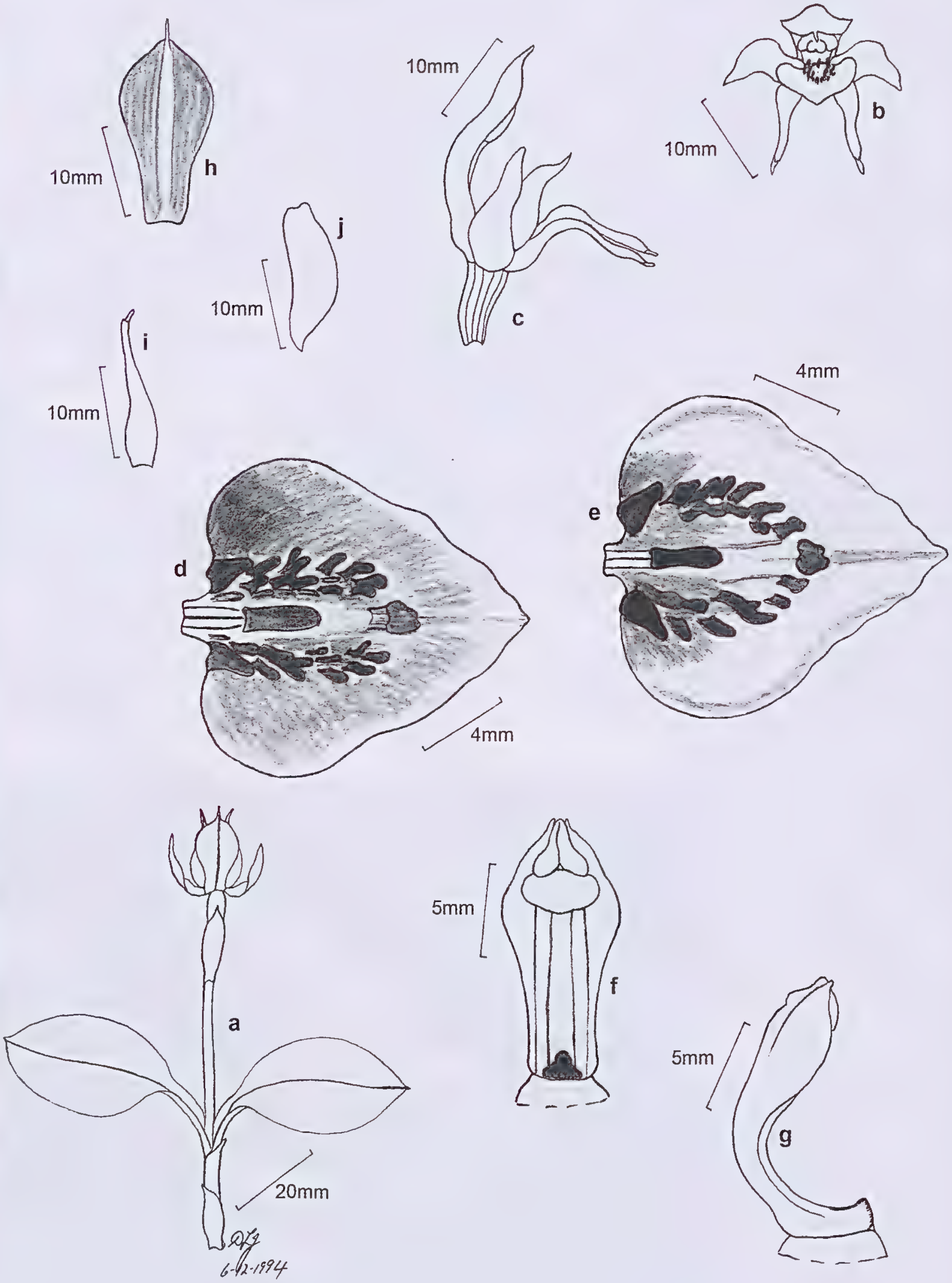
TAXONOMY

1. *Chiloglottis bifaria* D.L.Jones, ***sp. nov.*** With affinity to *Chiloglottis pluricallata* D.L.Jones but differing in details of the labellum calli, particularly the pair of basal calli being more or less tapered/triangular (linear-terete in *C. pluricallata*) and the main group consisting of eighteen to twenty-six crowded calli in two to four irregular rows (*cf.* two rows containing eight to twelve calli in the main group in *C. pluricallata*); also distinguished chemically by the flowers producing the kairomone chiloglottone 4 and chemical type E (chiloglottone 1 and 2, chemical type C in *C. pluricallata sensu stricto* [*s.s.*] – *fide* Peakall *et al.* 2010) and distinguished by pollinator specificity - *Neozeleboria* near *monticola* 1 in *C. bifaria* (*C. pluricallata s.s* is pollinated by *Neozeloboria* species nova near 41 – *fide* Bower & Brown 2009).

Type: NSW, Northern Tablelands. Polblue Swamp camping area, Barrington Tops, towards west end of swamp, 25 November 1996, *D.L.Jones 14991 & M.Garratt* (holo CANB 602010).



Chiloglottis bifaria
Polblue Swamp,
Barrington Tops, NSW
(photo: Lachlan Copeland)



***Chiloglottis bifaria*, Barrington Tops, NSW, *C.Bower (DLJ 13750)* (Fig. 1.)**
a. flowering plant; b. flower from front; c. flower from side; d., e. labella from above taken from two clones; f. column from front; g. column from side; h. dorsal sepal; i. lateral sepal; j. petal.

© D.L.Jones 6 Dec. 1994.

Description: Terrestrial tuberous *herb* forming colonies. *Tubers* not seen. *Leaves* ground hugging; lamina broadly elliptical, 3.5-6.5 cm long, 2-2.7 cm wide, dark green adaxially, paler beneath with prominent dark veins, margins entire; petioles 10-20 mm long. *Peduncle* erect, 3-6 cm long, 2 mm wide, green to brownish. *Fertile bracts* obovate-lanceolate, 13-20 mm long, 8-11 mm wide, closely sheathing, acuminate. *Pedicel* erect, 8-16 mm long, slender. *Flower* solitary, erect, 18-23 mm wide, reddish pink to greenish purple, with shiny black labellum calli. *Dorsal sepal* erect and incurved, broadly obovate, 18-22 mm long, c. 10 mm wide; osmophore linear-terete, c. 3 mm long. *Lateral sepals* projected forwards beneath the labellum, narrowly linear-tapered, 15-18 mm long, c. 4 mm wide, flat, connate at the very base, erect in the proximal third then recurved, parallel or slightly divergent; osmophore linear-terete, 2 mm long, dark reddish purple. *Petals* oblong-lanceolate, slightly falcate, 15-17 mm long, c. 5 mm wide, widely divergent. *Labellum* articulated on a short claw c. 0.6 mm long, held erect, tremulous; lamina broadly ovate-cordate, 13-15 mm long, 12-14 mm wide, margins entire or shallowly irregular, with or without a light marginal band, the apex obtuse to acute. *Callus* occupying the central proximal half of the ventral surface of the labellum, consisting of an oblong to elliptic callus plate and black, shiny calli; major central gland c. 3.5 mm long, erect, linear-terete, columnar, obtuse, this flanked on the edge of the plate by 2-4 irregular rows of 8-16 shorter erect to prostrate columnar calli, at the base on each side 2 more or less tapered/triangular black sessile calli; distal gland more or less quadrate, c. 1-1.4 mm wide, sessile. *Column* incurved, 10-13 mm long, c. 4.5-5.5 mm wide, green to brown with purplish markings on the anterior surface; central ridge c. 2.5 mm wide; wings c. 1.5 mm wide, about as high as the anther. *Anther* smooth, c. 2.5 mm long, c. 2.3 mm wide, yellow, with a short rostrum. *Pollinia* boomerang-shaped, c. 3 mm long, bright yellow, mealy. *Stigma* transversely elliptic, c. 3 mm wide, sunken. *Capsule* obovoid, 11-14 mm long, 5-6 mm wide, on a swollen pedicel c. 15-20 cm long. **Fig. 1.**

Distribution and ecology: Apparently restricted to the Barrington Tops and Gloucester Tops of northern NSW growing at high elevations (1,500-1,575 m) among low heathy shrubs in sphagnum mounds; also beside small streams and among tussocks in tall montane forest with a relatively open grassy understorey. Flowering: November to January.

Recognition: This species grows sympatrically with *Chiloglottis pluricallata* and has been confused with that species, however *Chiloglottis bifaria* is readily distinguished by the more numerous crowded labellum calli arranged in two to four irregular rows. It is also distinguished by the pair of basal calli being more or less tapered/triangular (linear-terete in *Chiloglottis pluricallata*) and its pollinator specificity.

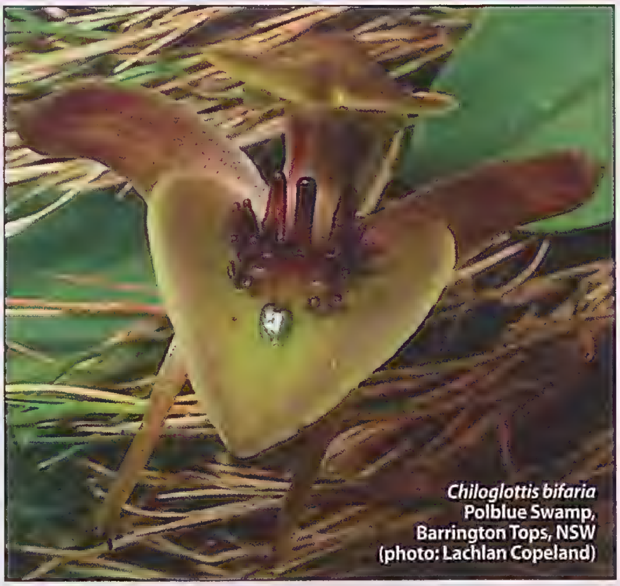
Pollination: This species was designated as *Chiloglottis* sp. aff. *pluricallata* 2 (Bower 2006) and the thynnine wasp pollinator was determined as *Neozeleboria* near *monticola* 1 (Bower & Brown 2009), with chiloglottone 4 the attractant and chemical type E (Peakall *et al.* 2010).

Conservation status: Conserved in Barrington Tops National Park and Gloucester Tops National Park, New South Wales.

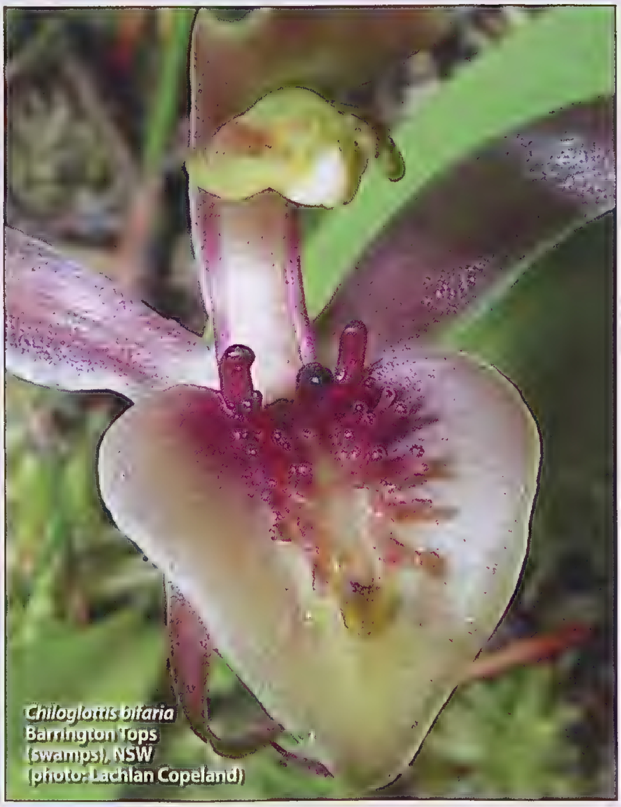
Etymology: The Latin *bifarius*, in two rows, referring to the arrangement of the main group of labellum calli.

Preliminary Notes for Next Taxon:

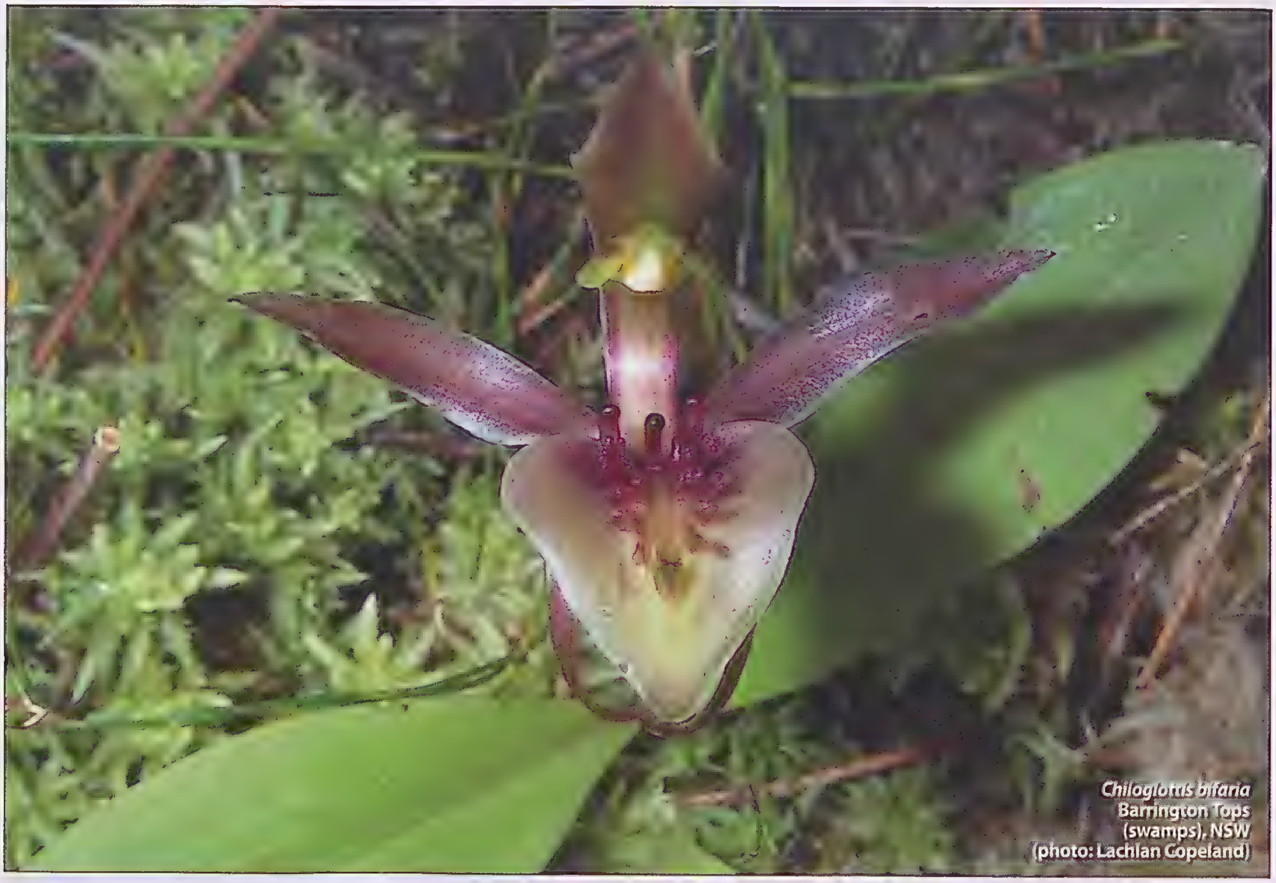
Extensive baiting studies carried out by Colin Bower in south-eastern Australia and Tasmania (Bower 2000) proved that *Chiloglottis reflexa sensu stricto*, pollinated by the wasp *Neozeleboria proxima*, is the only species in the *C. reflexa* group to occur in Tasmania. He also found identical responses with *Neozeleboria proxima* when testing mainland populations currently described as *C. trilabra*. Not only do both taxa have the same pollinator but they also have a very similar arrangement of the labellum calli. These results strongly suggest that Tasmanian populations and the mainland populations he studied are the same species, and *C. trilabra* is a synonym of *C. reflexa*. Thus mainland populations previously known as *C. trilabra* become a synonym of *C. reflexa* and mainland populations currently attributed to *C. reflexa* are undescribed. That taxon is here described as *Chiloglottis curviclavia*.



Chiloglottis bifaria
Polblue Swamp,
Barrington Tops, NSW
(photo: Lachlan Copeland)



Chiloglottis bifaria
Barrington Tops
(swamps), NSW
(photo: Lachlan Copeland)



Chiloglottis bifaria
Barrington Tops
(swamps), NSW
(photo: Lachlan Copeland)

2. *Chiloglottis curviclavia* D.L.Jones, *sp. nov.*

With affinity to *C. reflexa* (Labill.) Druce but differing by short apical clubs on the lateral sepals which commonly recurve beneath the labellum (long deflexed clubs in *C. reflexa*) and the major stalked gland on the labellum callus projecting above the main mass of labellum glands (the major stalked gland in *C. reflexa* merges in line with the rest of the calli when viewed from the side), and pollinated by *Neozeloboria* sp. 30 (*C. reflexa* is pollinated by *Neozeloboria proxima*).

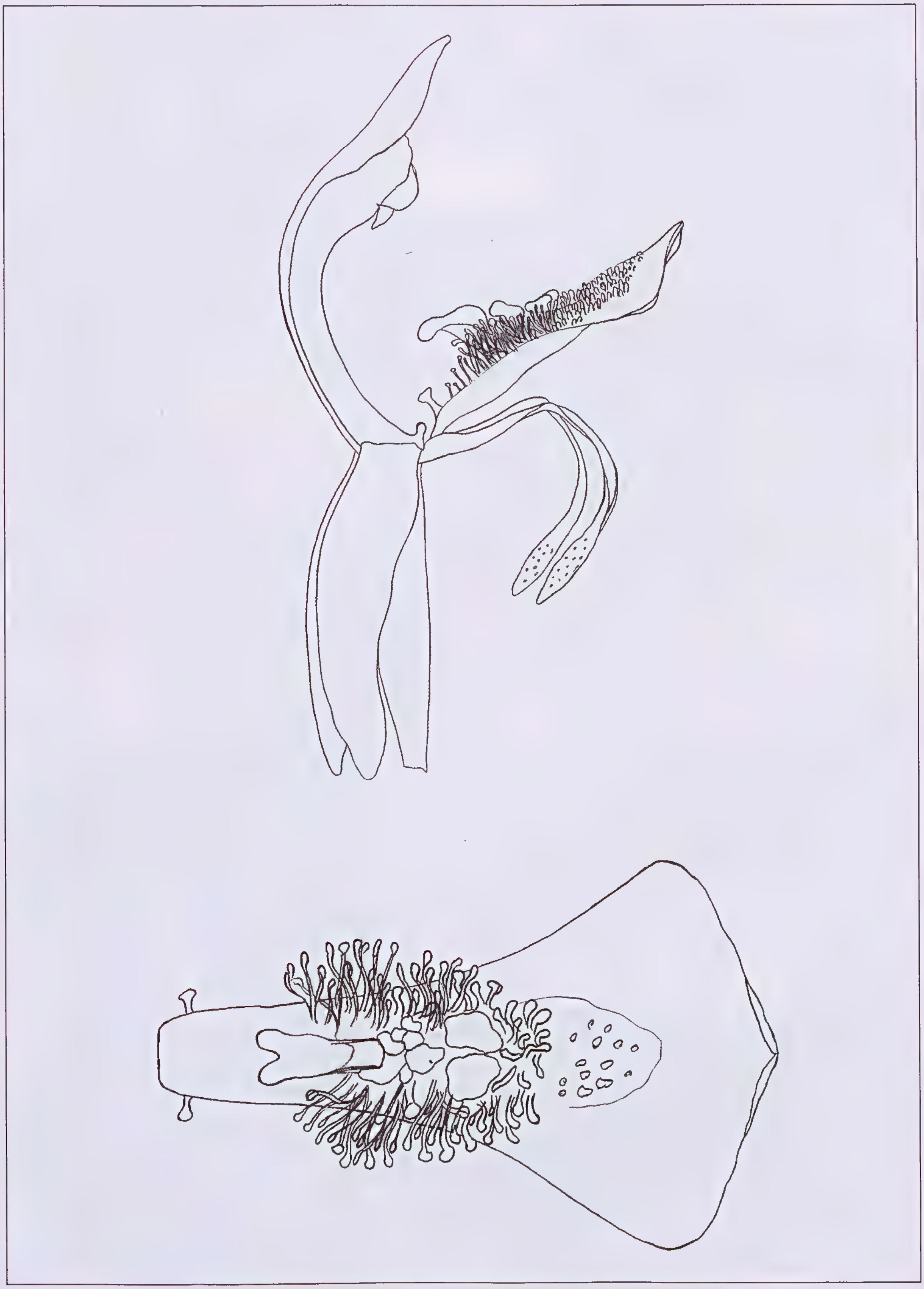
Type: New South Wales. Central Tablelands, Blue Mountains, c. 4.4 km NE of Chimney House turn-off, Mt Wilson – Mt Irvine Road, 8 Feb. 1993, *D.L.Jones 11299 & C.H.Broers* (holo CANB 677868, iso NSW).

Illustrations: Page 133, Backhouse & Jeanes (1995), plate 290, Bishop (1996), page 25, Jeanes & Backhouse (2006) – all as *Chiloglottis reflexa*.

Description: *Leaves* ground-hugging, ovate to elliptic, 25-60 x 15-30 mm, often only partially developed at flowering time, dark green above, greyish beneath, margins usually undulate. *Scape* 60-150 mm long, pinkish to reddish. *Flower* porrect to obliquely erect, 18-25 x 10-15 mm, greenish bronze to greenish purple, labellum calli mostly blackish and reddish, column green or speckled with red. *Dorsal sepal* narrowly spathulate, 10-13 x 2.5-3 mm, apical club c. 2 mm long. *Lateral sepals* often curved inwards under the labellum, 10-13 x 0.6 mm, apical clubs 2-3 mm long, apex reddish, often thickened. *Petals* reflexed against the ovary, 8-10 x 2.5 mm. *Labellum* held horizontally, trapezium-shaped, 9-11 x 6-7 mm, elongate, narrow at the base, widest just below the apex, with a short to moderately long, blunt, decurved terete point. *Callus* covering most of the labellum as a mass, consisting of numerous stalked and sessile glands, the whole structure resembling a large ant; main stalked gland standing well above the other calli, usually notched, then several large sessile glands, flanked by slender sessile or stalked clubbed glands, the apical glands in a narrowing tail-like grouping to the labellum apex. *Column* curved, 7-9 mm long, 2.5-3 mm wide, green with some light red speckles. *Anther* green with cream to yellow flaps, c. 2 mm long. *Pollinia* boomerang-shaped, about 1.3 mm long, yellow, mealy. *Stigma* semi-circular, 2-2.5 mm wide, sunken. *Capsules* ellipsoid, 7-8 mm long, 2-3 mm across, on an extended pedicel 10-15 cm tall. **Fig. 2.**

Distribution and ecology: NSW (coastal lowlands and hinterland lowlands and ranges north to the Blue Mountains), Vic (mainly southern areas, common in the east, scattered and uncommon in the west, extending inland in the north-east of the state and in parts of the west); possibly also near Mt Gambier, SA, but now extinct (Bates 2006-2016); 0-900m alt. Widely distributed and often locally common in coastal scrubs, heathland, heathy forest and open forest in grey to white sandy loams, peaty soils and clay loams. Often found in extensive clonal colonies under the shelter of bracken and shrubs in the swales between stabilised coastal dunes. Flowering: December to July-(September).

Recognition: This species has small flowers with short deflexed lateral sepals, the apical clubs often recurved beneath the labellum, a long trapeziform-shaped labellum narrowest and attenuated at the base, widest near the apex with a pointed terete tip, (sometimes recurved) and a massed insectiform group of calli covering most of the labellum surface with the major proximal gland standing like a sentinel above the rest.



***Chiloglottis curviclavia*, Mt Ousley, NSW, *R.G.Tunstall* (Fig. 2.)**
Flower from side and labellum from above.
© D.L.Jones 7 May 1987.

Pollination: This species is pollinated by *Neozeloboria* sp. 30 (Bower 2001).

Notes: It is usual for a very low proportion of flowering plants to occur in a colony, especially in overgrown habitats. Flowering is greatly stimulated by hot summer fires, heavy late summer-autumn rains and disturbance such as slashing.

Conservation status: Widely distributed and well conserved.

Etymology: The Latin *curvus*, curved, and *clavi, clavius*, clubbed, in reference to the short apical osmophores on the lateral sepals.

Acknowledgements

Special thanks to Colin Bower for numerous discussions over the years about various aspects of *Chiloglottis*, in particular the results of his incredibly detailed pollination studies, Rod Peakall for keeping me up-to-date with literature and his research results on various aspects of the pollination syndrome and chemistry of the genus, and Mark Clements for regular discussions about native orchids. Numerous people are thanked for supplying specimens which helped to elucidate the taxonomy of *Chiloglottis*, in particular Peter Branwhite†, Lachlan Copeland, Ralph Crane†, Jeff Jeanes, John Riley, Dean Rouse, Ron Tunstall† and Hans, Annie and Mark Wapstra. Thanks also to Brendan Lepschi for access to specimens at CANB and Marion Garratt, Karina Richards and Emma Toms for technical assistance. Barbara Jones commented on the manuscript.

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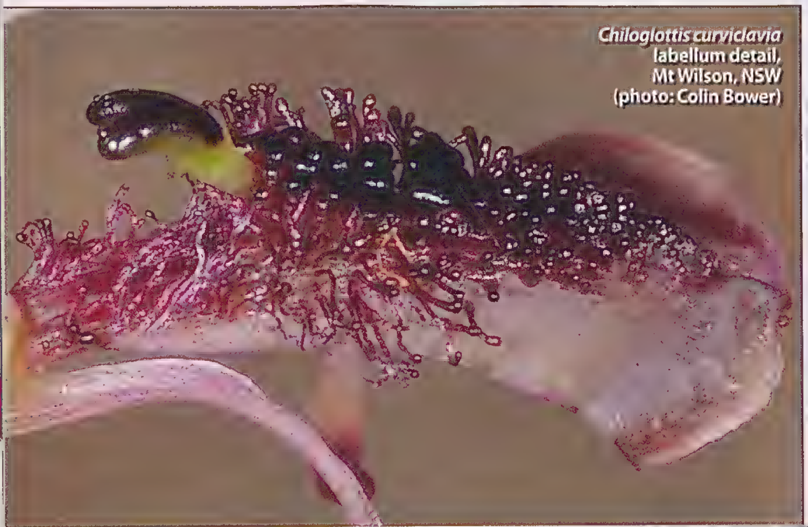
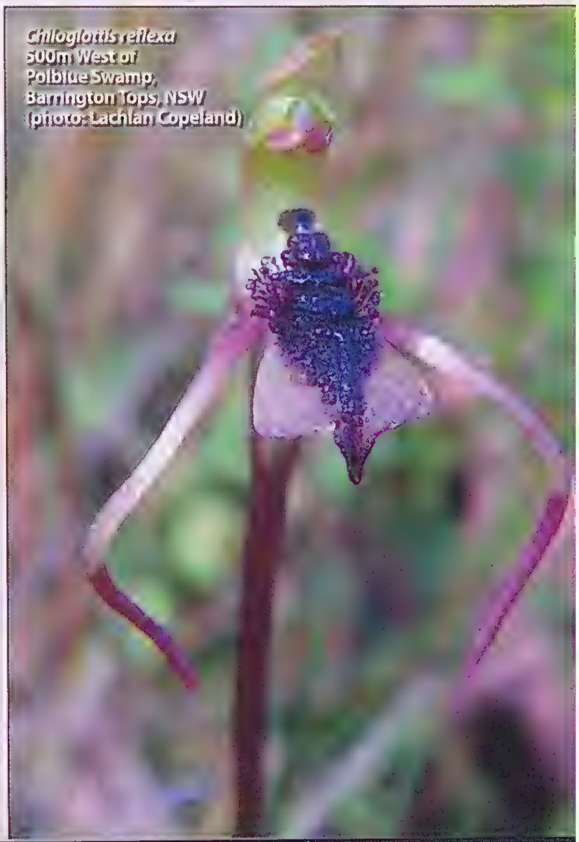
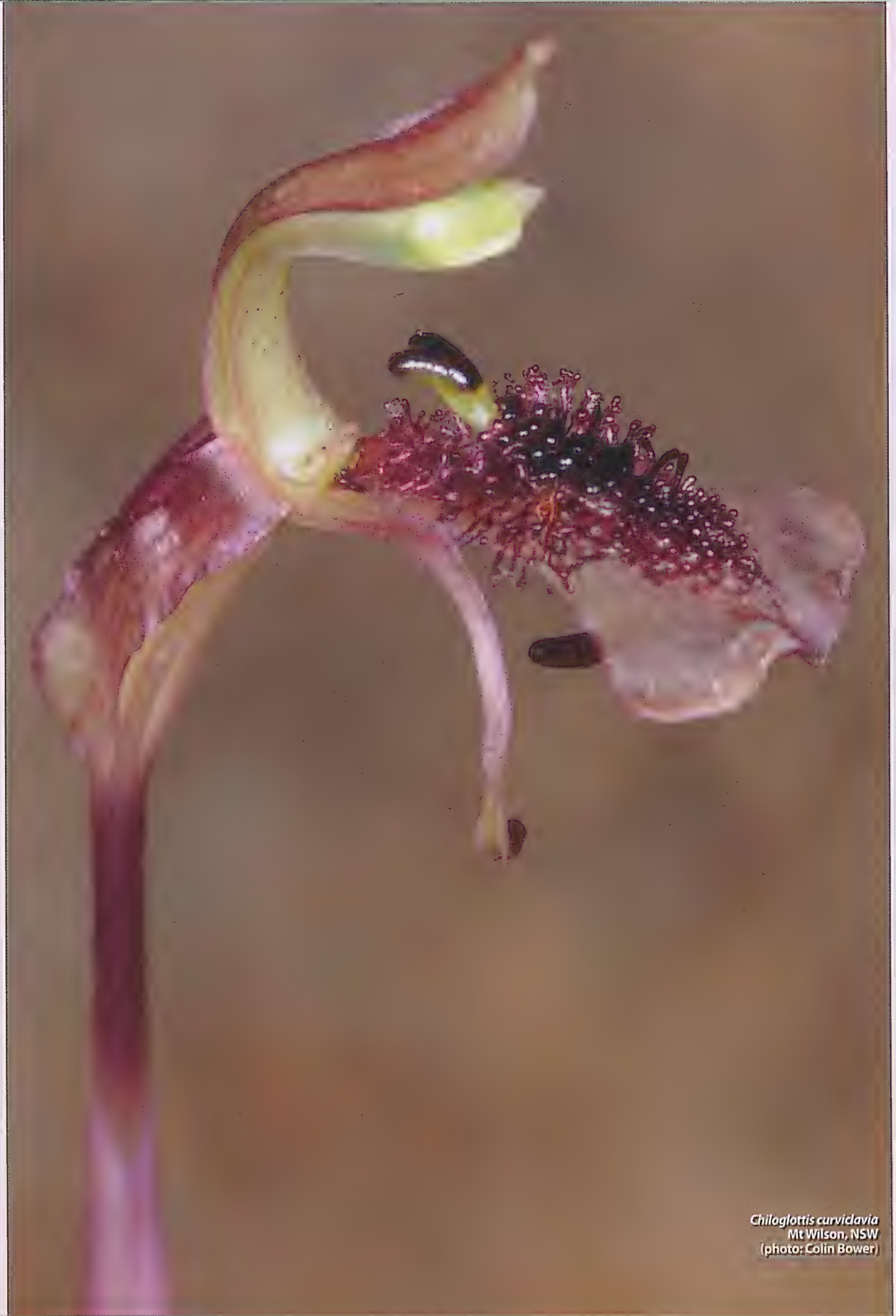

Chiloglottis curviclavia
labellum detail,
Mt Wilson, NSW
(photo: Colin Bower)


Chiloglottis reflexa
500m West of
Polblue Swamp,
Barrington Tops, NSW
(photo: Lachlan Copeland)



Chiloglottis curviclavia
Mt Wilson, NSW
(photo: Colin Bower)

Notes on Australasian Orchids 1: *Stigmatodactylus* and *Townsonia* (Diurideae)

Text and photos by Mark A. Clements and David L. Jones

Abstract

The status of *Acianthella, Acianthopis* and *Spuracianthus* relative to *Stigmatodactylus* and *Townsonia* (Acianthinae) is reassessed based on the results from a combined, supermatrix-derived phylogeny for DNA sequences from five rapidly evolving loci in the chloroplast genome, as well as ITS, *PhyC,* and *AgtI* in the nuclear genome. Transfers were undertaken to maintain the integrity of *Stigmatodactylus* and *Townsonia* as monophyletic genera.

Introduction

The classification of taxa within the Acianthinae has been the subject of extensive debate. Preliminary analyses of chloroplast sequences (Kores *et al.* 2001) and variation in morphology and nrDNA ITS sequences (Clements *et al.*, 2002) showed that *Acianthus* was polyphyletic. Lyon (2014) and http://acianthinae.myspecies.info/ in her website "The genus *Corybas* and relatives" published results of an analysis of the phylogenetic relationships in subtribe Acianthinae based on an extensive sampling of taxa from throughout much of its range, using a combined, supermatrix-derived phylogeny for DNA sequences from five rapidly evolving loci in the chloroplast genome, as well as ITS, *PhyC,* and *AgtI* in the nuclear genome. Her results provided a basis for the development of a robust molecular phylogeny for Acianthinae and serve to evaluate generic delimitation therein and the validity of all proceeding morphological or molecular based classifications of this group of orchids. Dates for the timing of biogeographic diversification in the subtribe were also calculated based on these data.

On the basis of her results Lyon identified some anomalies within Acianthinae and therefore foreshadowed the possibility of change therein. To date none of these proposed changes have been taken up. Her studies revealed that the genus *Acianthus* is clearly polyphyletic. *Acianthus atepalus* although separated by long branches formed a strongly supported group with *Townsonia* at the base of the Acianthinae. Lyon therefore proposed that *Acianthus atepalus* should be sunk into *Townsonia*, as they share several morphological features, including a winged column, reduced or absent lateral petals, a simple lip, and leaves with veins that do not anastomose at the tip. Lyon estimates the age of separation of this lineage is around 27 MYA (Million Years Ago) followed by the separation of *Acianthus atepalus* and *Townsonia* at around 18 MYA. *Acianthus atepalus* was on the basis of morphology differences placed in the monospecific genus *Spuricianthus* Szlach. & Marg.

Even with the removal of *Acianthus atepalus* this still left *Acianthus* as a paraphyletic genus. Three *Acianthus* species from Australia, *Acianthus caudatus* R.Br., *Acianthus fornicatus* R.Br. (the Type of the genus) and *Acianthus exsertus* R.Br., all grouped into one strongly supported clade whereas five species endemic to New Caledonia *Acianthus macglossus, Acianthus confusus, Acianthus elegans* Rchb.f., *Acianthus bracteatus* Ridl. and *Acianthus cymbalariifolius* aligned with species of *Stigmatodactylus* in a separate but equally strongly supported clade. The New Caledonia species were by Kores (1995) segregated into sections within *Acianthus*; the large-flowered taxa with wide, multi-veined lateral petals in *Acianthus* subgen. *Univiscidiatus* sect. *Macropetalus* and smaller flowered taxa with narrow, single veined lateral petals into *Acianthus* subgen. *Univiscidiatus* sect. *Univiscidiatus*. Both taxa were later raised to generic status as *Acianthopsis* M.A.Clem. et D.L.Jones (2002). and *Acianthella* D.L.Jones et M.A.Clem. (2004). respectively. Lyon (2014) estimated the segregation of the Australian *Acianthus* occurred around 23 MYA whereas the *Stigmatodactylus-Acianthopsis-Acianthella* lineage occurred approximately 20 MYA with subsequent development of species commencing approximately 11 and 12 MYA respectively within both groups.

On the basis of these results Lyon (2014) acknowledged that whilst the sampling of these groups was limited nevertheless they were reflective of the overall picture of the groups phylogeny. It was therefore suggested that the primarily New Caledonian species transfer into *Stigmatodactylus.* All three groups have a single viscidium and appendages on the posterior margin of the stigma. Additional similarities can be found between *Stigmatodactylus* and the large-flowered, New Caledonian taxa (*Acianthopsis sens.* Jones *et al.* 2002), particularly the presence of a single, basal callus on the labellum and appendages on the ventral surface of the column. Transfer of the two Australian species *Stigmatodactylus amplexicaulis* and *Stigmatodactylus sublestus* has already been undertaken (Jones and Clements 2017).

Acianthus caudatus (photo: A.W. Stephenson)

The purpose of this paper is to rectify this situation and provide a basis for the stabilisation of the generic concepts and nomenclature of various elements of Acianthinae. A synopsis of both genera is provided.

TAXONOMY

Stigmatodactylus Maxim. ex Makino, *Illustr. Fl. Japan* 1(7): 11, t. 43 (1891). Type species: *Stigmatodactylus sikakianus* Maxim. ex Makino

Pantlingia Prain, J. Asiatic. Soc. Bengal 65: 106-109 (1896). Type species: *Pantlingia paradoxa* Prain

Acianthella D.L.Jones & M.A.Clem., Orchadian 14(7): 330-332 (Mar. 2004). Type species: *Microstylis amplexicaulis* F.M.Bailey (*Acianthus amplexicaulis* (F.M.Bailey) Rolfe).

Acianthopsis Szlach., Polish Bot. J. 46(2): 143 (31 Dec 2001 [June 2002]), *nom. illeg*. Type species: *Acianthus elegans* Rchb.f.

Perennial tuberous terrestrial or epiphytic, solitary herbs (see Jones in Pridgeon *et al.* 2001 for full description of the genus.)

A genus of 29 species with *Acianthus*-like habit predominantly terrestrials growing among moss and litter in moist humid forest, particularly rainforest and mist forest from sea level to as high as 3600 m elevation in Taiwan. Species are distributed sporadically over SE Asia including Japan and the Philippines, Malesia, Papua, SW Pacific islands including New Caledonia where there are 13 endemic species and two species along the east coast of Australia as far south as Gerroa on the New South Wales south coast.

These are fascinating plants some species having the habit of a mature plant of *Acianthus* but possess leaves reminiscent of those in *Corybas* or *Corysanthes* species in the juvenile state. However, unlike *Acianthus, Corybas* and *Corysanthes,* the method of reproduction of *Stigmatodactylus* is confined to the production of replacement root tubers and from seed. Colonies occur as scattered groups of individual plants that are not clonal.

Subgen. *Stigmatodactylus*

Comprises 13 species distributed throughout SE Asia, Japan, Malesia, Papua and the Solomon Islands.

Subgen. *Acianthopsis* (D.L.Jones & M.A.Clem.) M.A.Clem. & D.L.Jones, ***stat. nov.*** Basionym: *Acianthopsis* M.A.Clem. & D.L.Jones, *Orchadian* 13(10): 440 (31 Jan. 2002). Type species: *Acianthus cymbalariifolius* F.Muell. & Kraenzl.

Acianthus subgen. *Univiscidiatus* sect. *Macropetalus* Kores, *Allertonia* 7(3): 149 (1995); *Univiscidiatus* sect. *Macropetalus* (Kores) Szlach., *Polish Bot. J.* 46(1): 20 (2001); *Acianthopsis* sect. *Macropetalus* (Kores) Szlach., *Polish Bot. J.* 46(1): 20 (2001), *nom. illeg*. Type species: *Acianthus cymbalariifolius* F.Muell. & Kraenzl.

Acianthus subgen. *Univiscidiatus* Kores, *Allertonia* 7(30: 148 (1995); *Univiscidiatus* (Kores) Szlach., *Polish Bot. J.* 46(1): 20 (2001); *Acianthus* subgen. *Univiscidiatus* sect. *Univiscidiatus* Kores, *Allertonia* 7 (3): 163 (Nov. 1995), *nom. illeg*. Type species: *Acianthus elegans* Rchb.f.

Acianthus exsertus
Black Mt, ACT
(photo: Shoko)

Stigmatodactylus aegeridantennatus (N.Hallé) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus aegeridantennatus* N.Halle, *Fl. N. Caled. & Depend.*, 8: 434-435, t. 175, f. 8-13. (1977).

Stigmatodactylus amplexicaulis (F.M.Bailey) S.P.Lyon, M.A.Clem. & D.L.Jones, *Australian Orchid Review* 82(2): 63 (2017).

Stigmatodactylus bracteatus (Rendle) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus bracteatus* Rendle, J. *Linn. Soc., Bot.* 45: 254 (1921).

Stigmatodactylus confusus (Guillaumin) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus confusus* Guillaumin, *Bull. Soc. Bot. France* 69: 508 (1922 publ. 1923).

Stigmatodactylus corniculatus (Rendle) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus corniculatus* Rendle, *Journ. Linn. Soc., Bot.* 45: 255 (1921).

Stigmatodactylus cymbalariifolius (F.Muell. & Kraenzl.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus cymbalariifolius* F.Muell. & Kraenzl., *Oesterr. Bot. Zeitschr.* 44: 209 (1894).

Stigmatodactylus elegans (Rchb.f.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus elegans* Rchb.f., *Linnaea* 41: 56 (1876).

Stigmatodactylus grandiflorus (Schltr.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus grandiflorus* Schltr, *Bot. Jahrb. Syst.* 39: 39 (1906).

Stigmatodactylus halleanus (Kores) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus halleanus* Kores, *Allertonia*, 7(3): 149-152, f. 26 (1995).

Stigmatodactylus heptadactylus (Kraenzl.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus heptadactylus* Kraenzl., *Notul. Syst.* (Paris) 4: 132 (1928).

Stigmatodactylus macroglossus (Schltr.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus macroglossus* Schltr., *Bot. Jahrb. Syst.* 39: 40 (1906).

Stigmatodactylus oxyglossus (Schltr.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus oxyglossus* Schltr., *Bot. Jahrb. Syst.* 39: 40 (1906).

Stigmatodactylus sublestus (Dockrill) S.P.Lyon, M.A.Clem. & D.L.Jones, *Australian Orchid Review* 82(2): 63 (2017).

Stigmatodactylus tenuilabris (Schltr.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus tenuilabris* Schltr., *Bot. Jahrb. Syst.* 39: 42 (1906).

Stigmatodactylus veillonis (N.Hallé) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus veillonis* N.Hallé, *Fl. Nouv.-Caled. & Depend.* 8: 427, f. 124, t. 174, 1-5 (1977).

Townsonia Cheesem., *Manual New Zealand Fl.* 691 (1906). Type species: *Townsonia deflexa* Cheesem.

Spuracianthus Szlach. & Marg., *Polish Bot. J.* 46(1): 27-29, f.1, 2 (2001), ***syn. nov.*** Type species: *Spuracianthus atepalus* (Rchb.f.) Szlach. & Marg. (*Acianthus atepalus* Rchb.f.).

A perennial terrestrial herbs (see Jones in Pridgeon *et al.* 2001 for description of the genus.).

A genus of 3 species each endemic in Tasmania (Australia), New Zealand where plants predominantly inhabit the Myrtle forest and mist forest on the mountains of New Caledonia. These are an equally fascinating group of species possessing rudimentary characters present in the whole of the Acianthinae. They however, differ by possession of stolonoid or rhizomatous underground systems rather than root tubers. These features coupled with the relative age and position at the base of the tree sister to all others species points to the entire group having evolved from plants of similar appearance and habitat.

Townsonia atepala (Rchb.f.) M.A.Clem. & D.L.Jones, ***comb. nov.*** Basionym: *Acianthus atepalus* Rchb.f., *Linnaea* 41: 56 (1876).

Townsonia deflexa Cheesem., *Man. New Zealand Fl.* 692 (1906).

Townsonia viridis (Hook.f.) Schltr., *Repert. Spec. Nov. Regni Veg.* 9: 250 (1911).

Acianthus fornicatus
Bulahdelah, NSW

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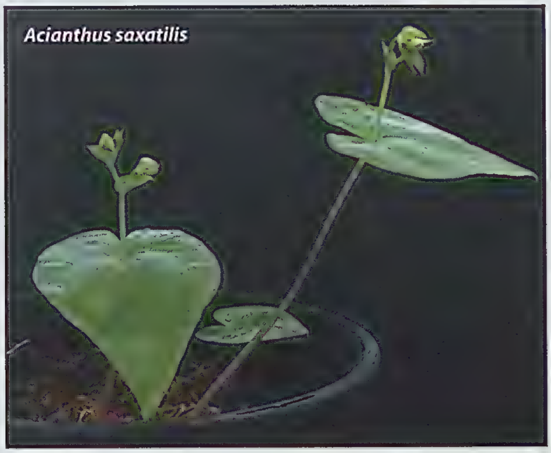
Acianthus saxatilis

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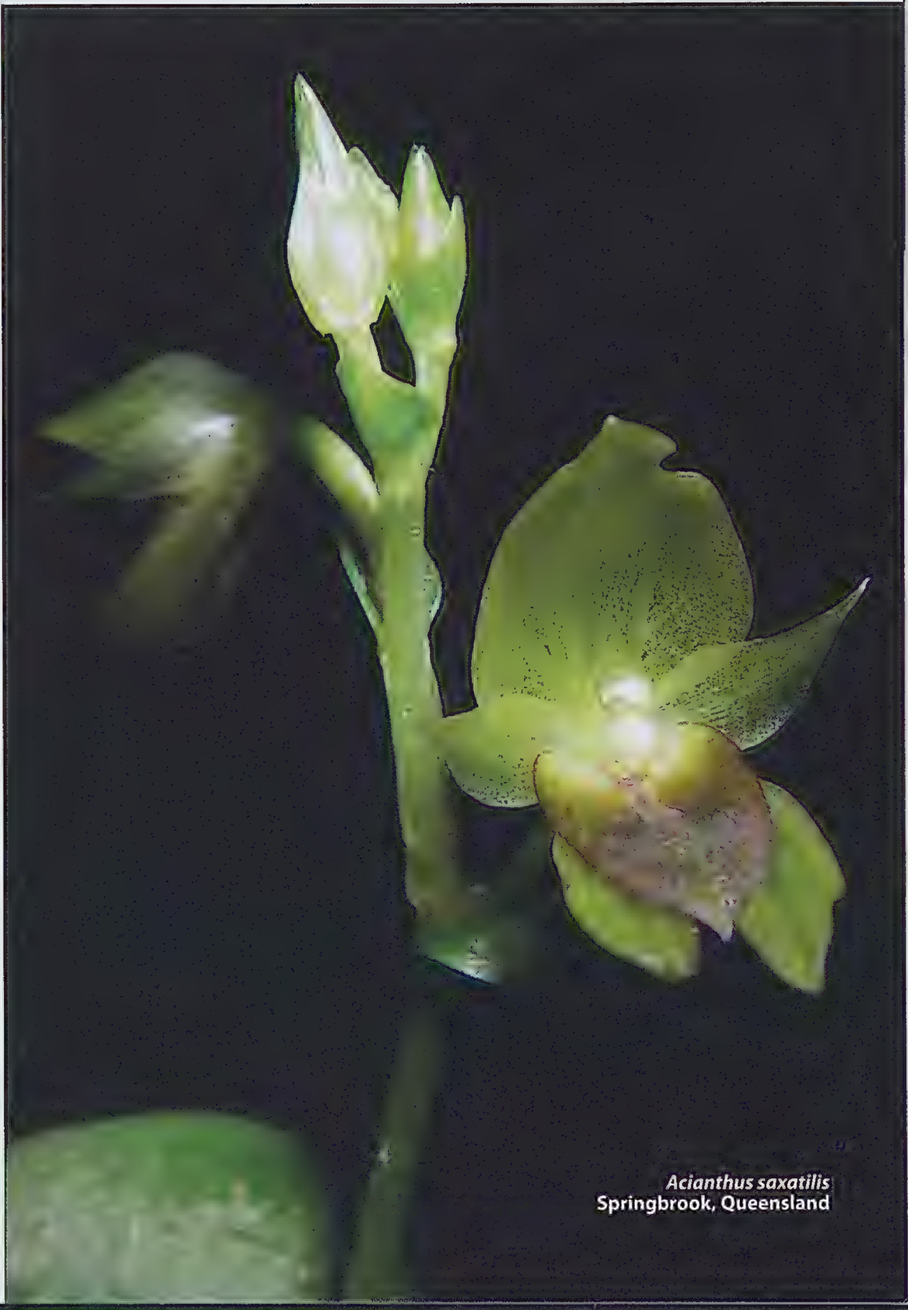
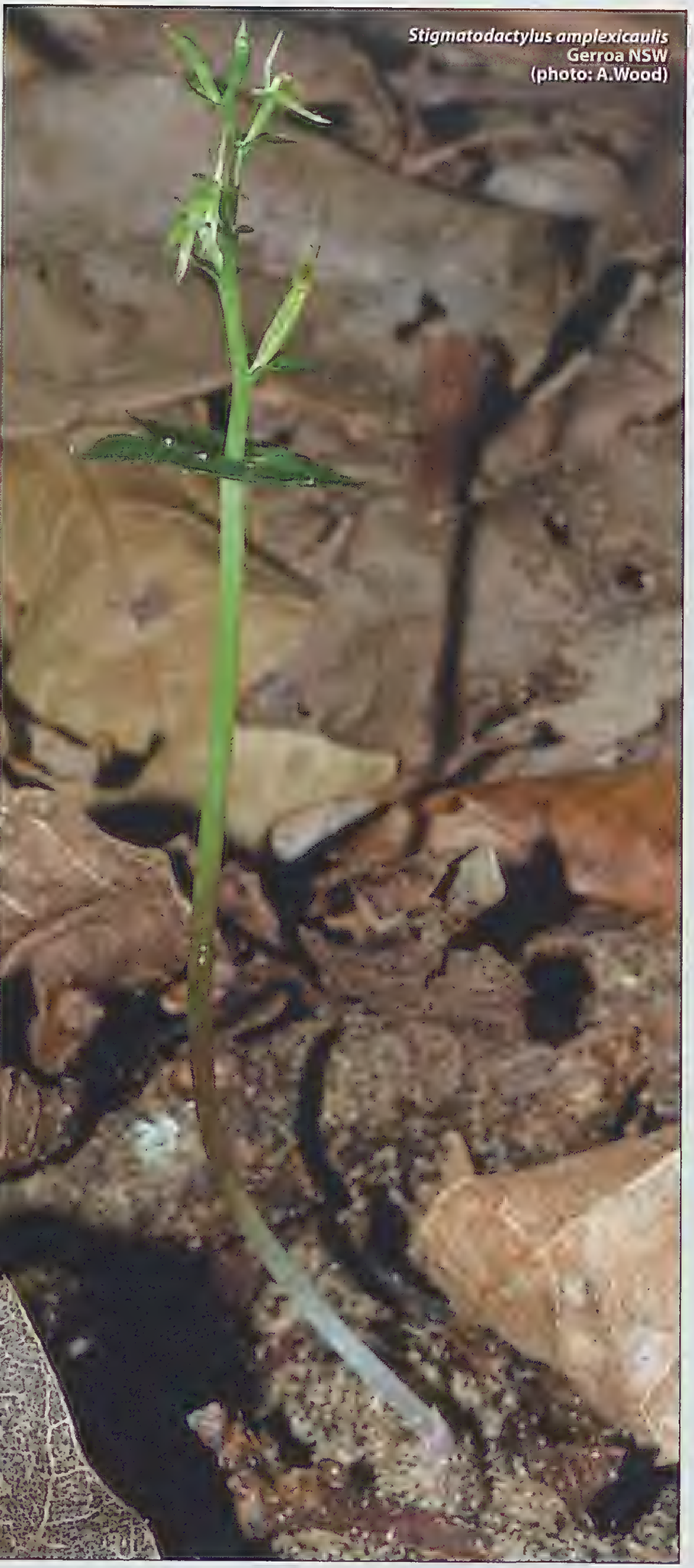
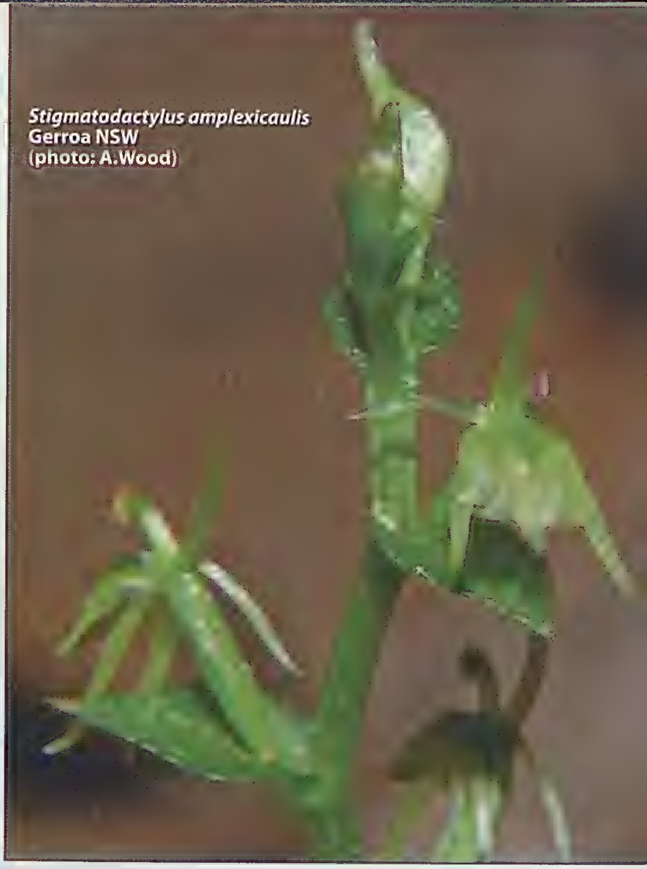
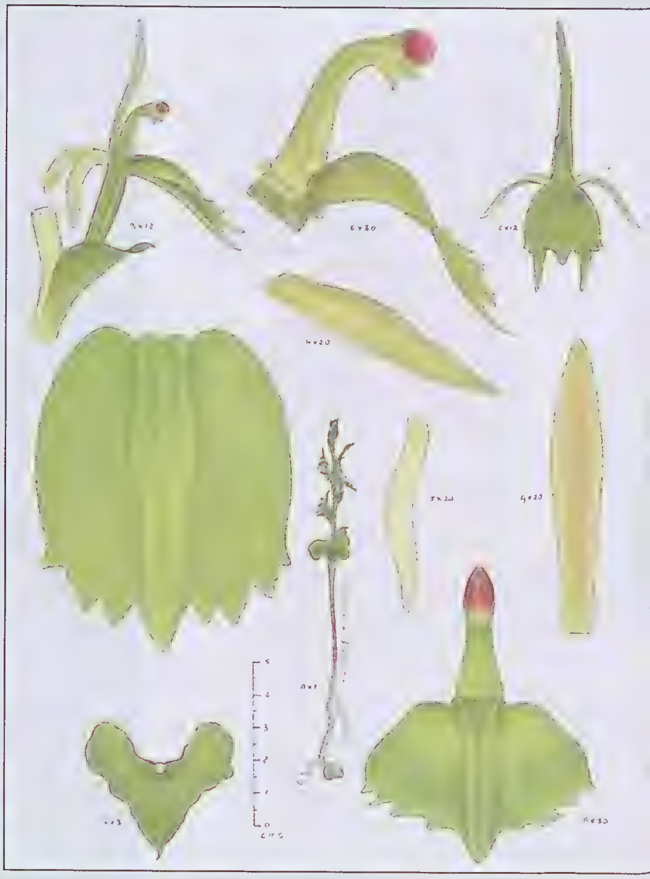

Acianthus saxatilis
Springbrook, Queensland



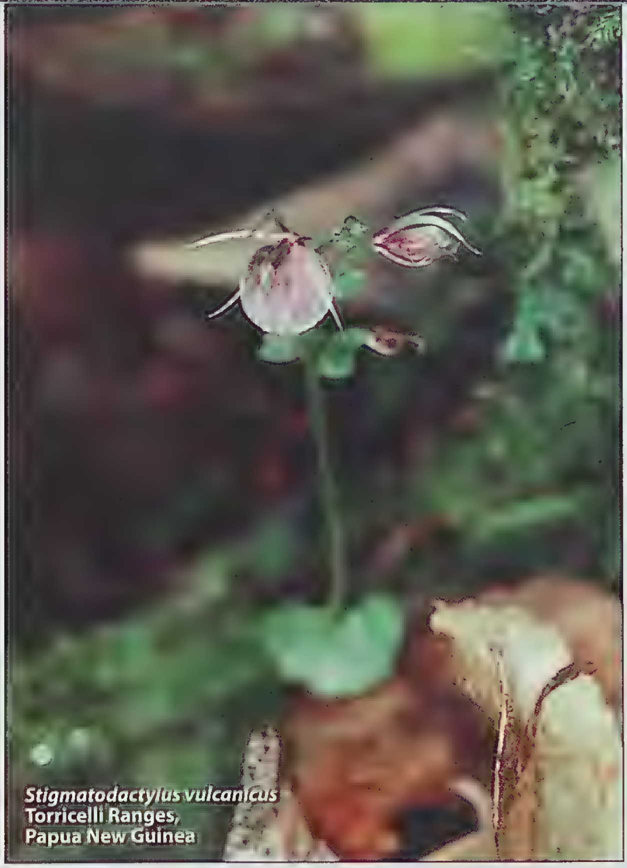
Stigmatodactylus amplexicaulis
Gerroa NSW
(photo: A.Wood)



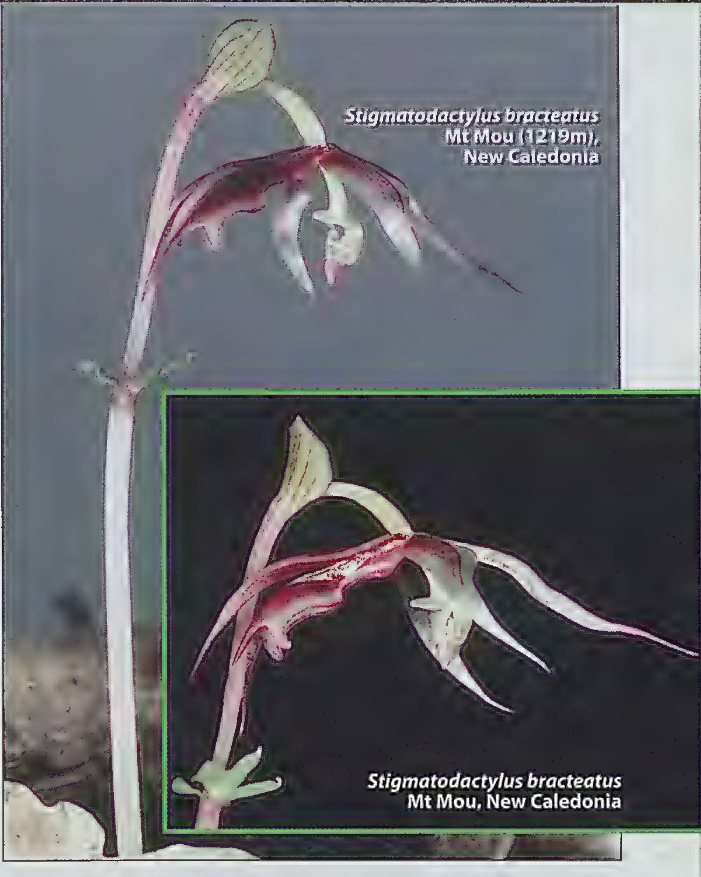
Stigmatodactylus amplexicaulis
Gerroa NSW
(photo: A.Wood)



Stigmatodactylus sublestus (drawing: J.J. Riley)

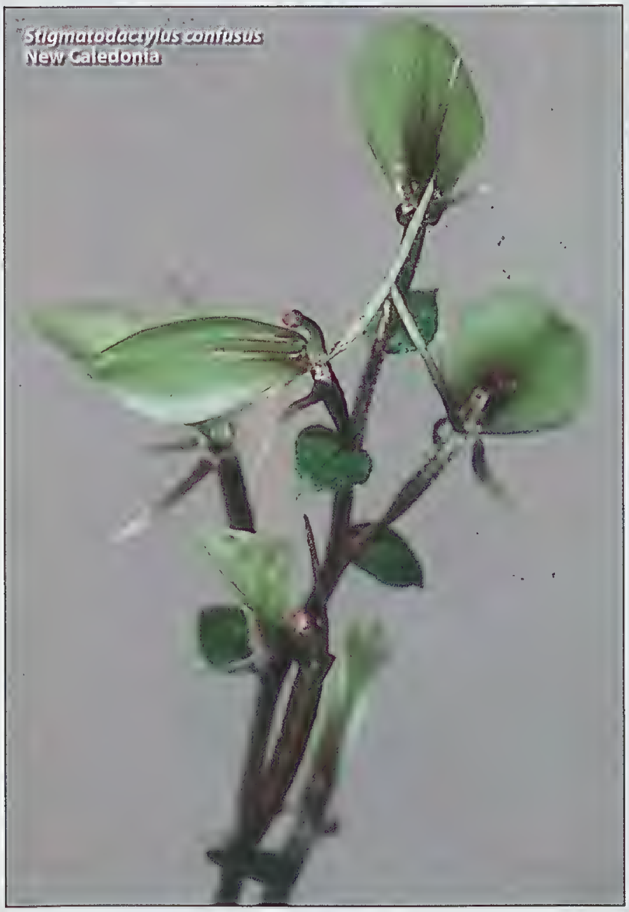


Stigmatodactylus vulcanicus
Torricelli Ranges,
Papua New Guinea

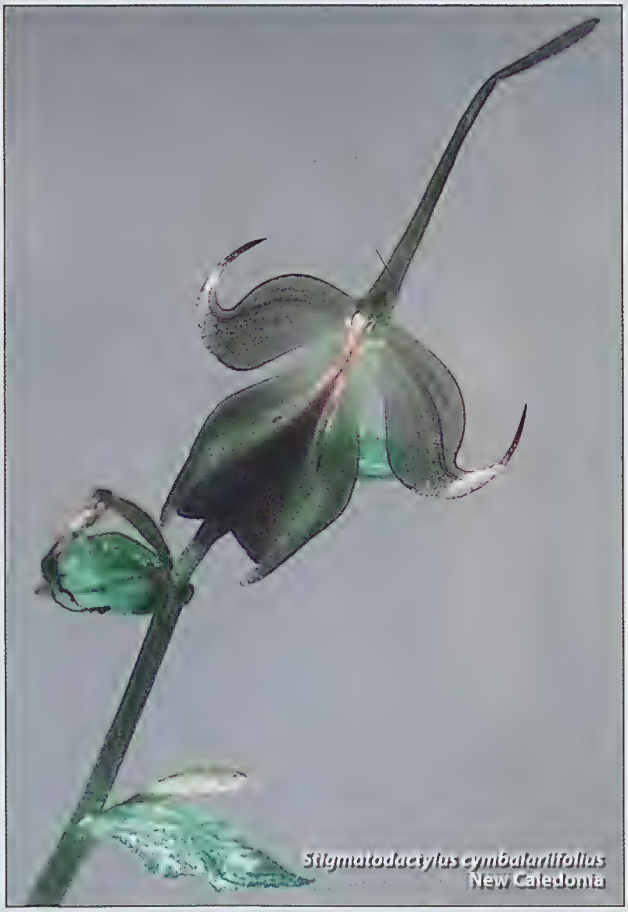


Stigmatodactylus bracteatus
Mt Mou (1219m),
New Caledonia

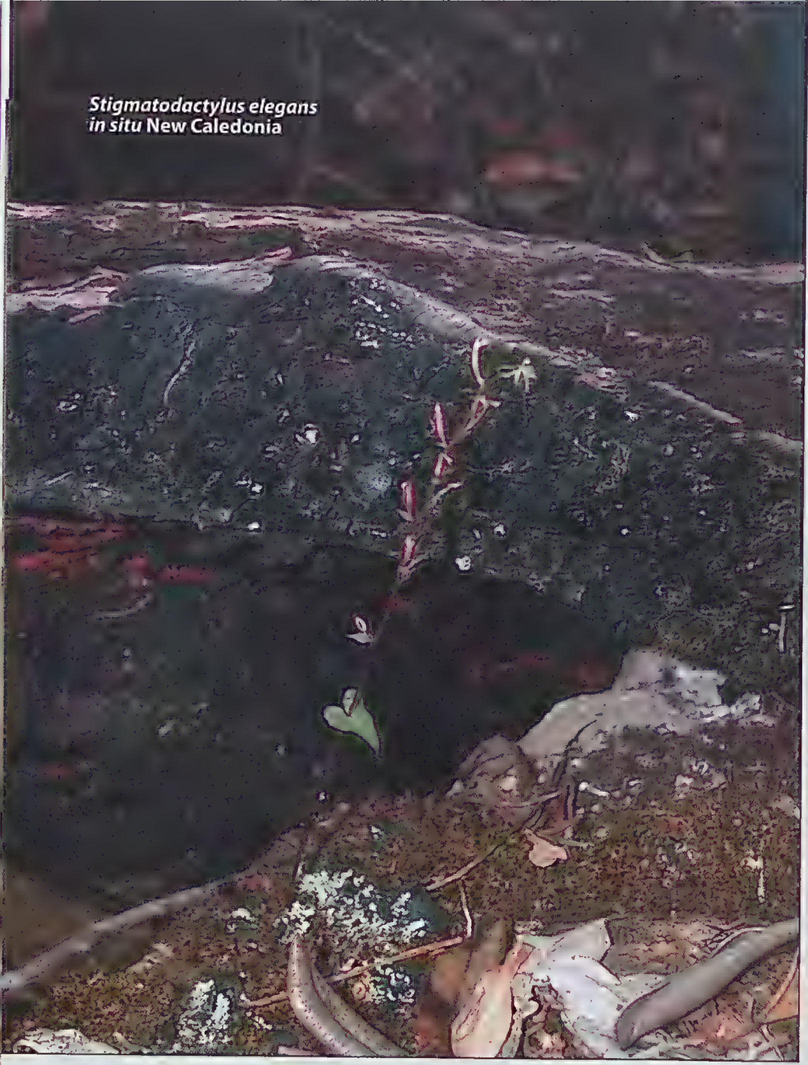
Stigmatodactylus bracteatus
Mt Mou, New Caledonia



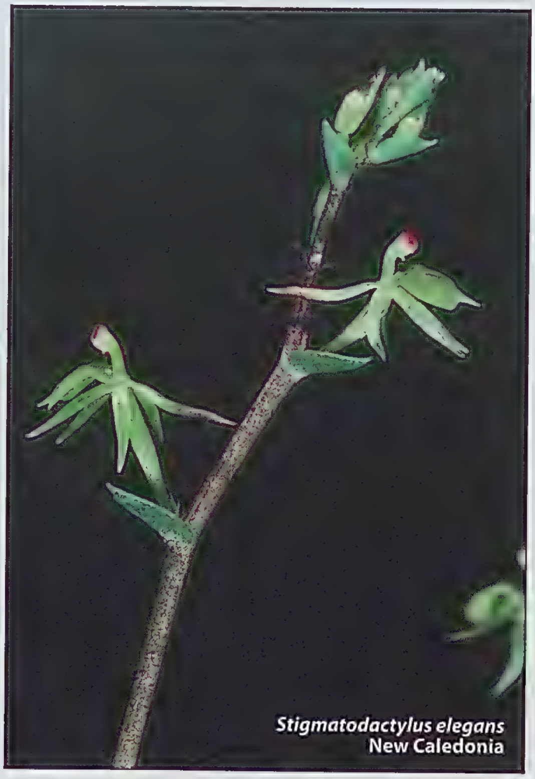
Stigmatodactylus confusus
New Caledonia



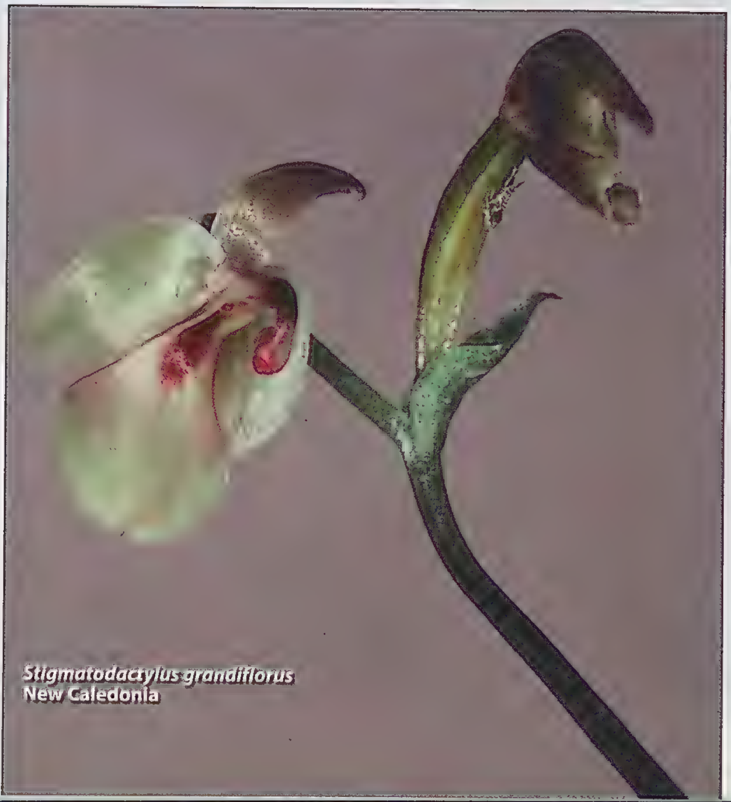
Stigmatodactylus cymbalariifolius
New Caledonia



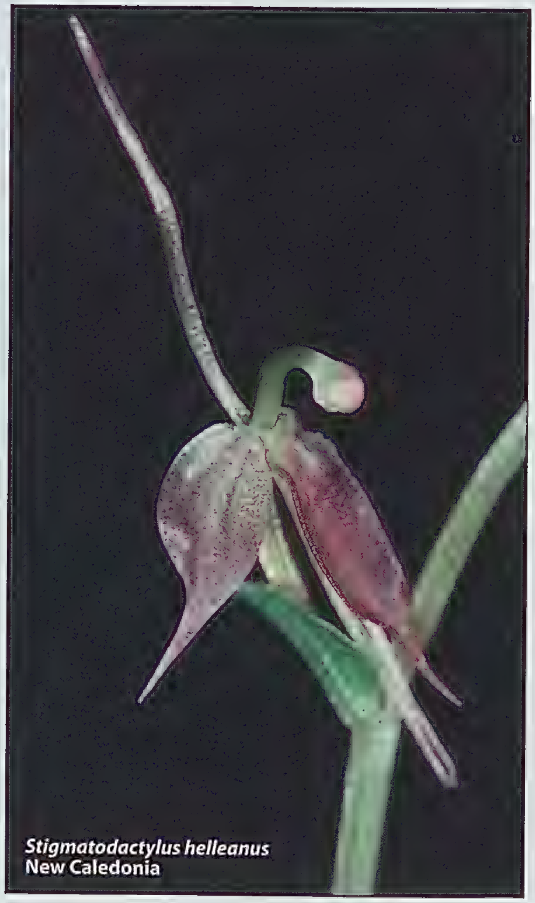
Stigmatodactylus elegans in situ New Caledonia



Stigmatodactylus elegans New Caledonia

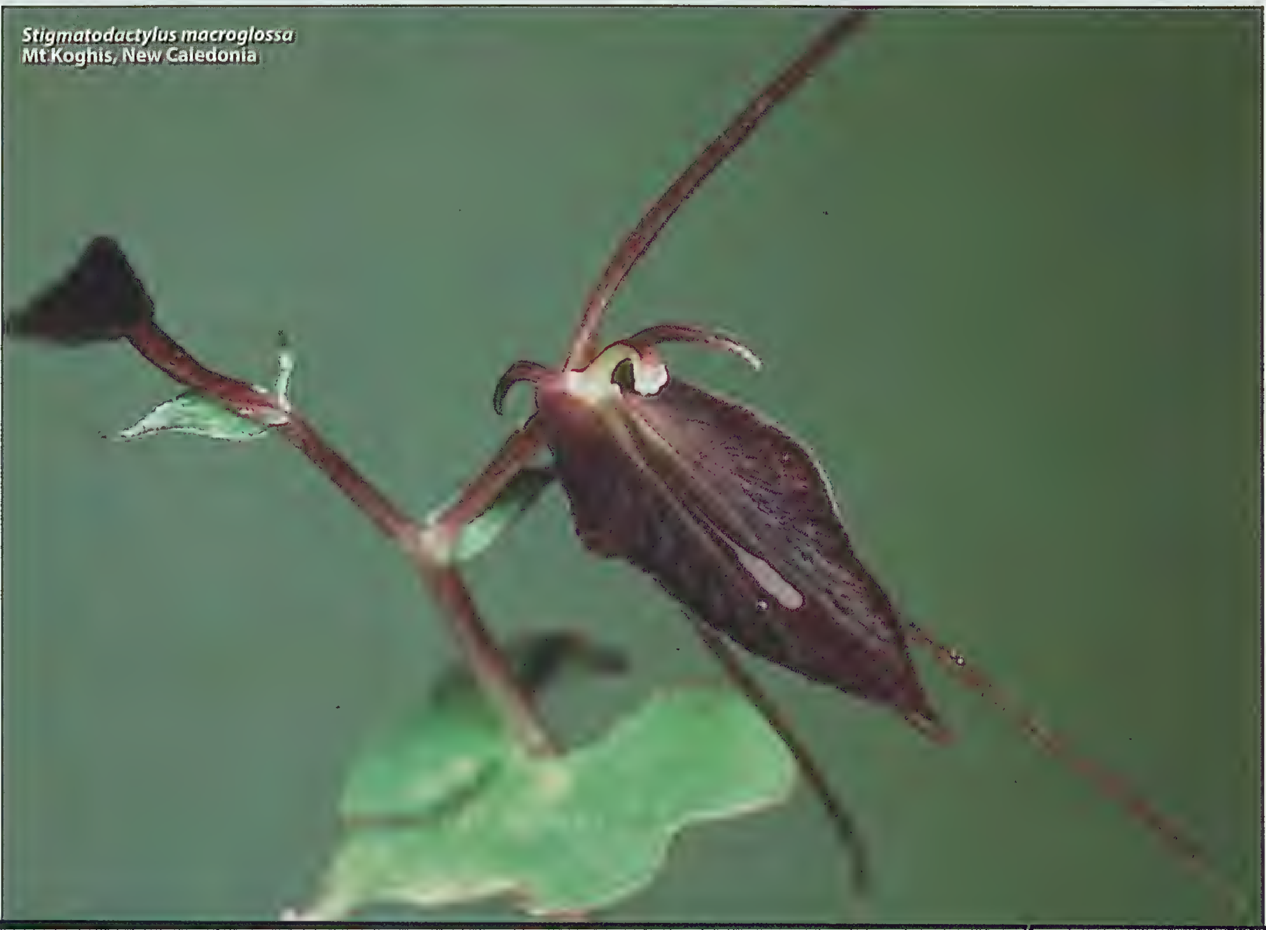


Stigmatodactylus grandiflorus New Caledonia



Stigmatodactylus helleanus New Caledonia

Mount Koghis, New Caledonia
(1061m)

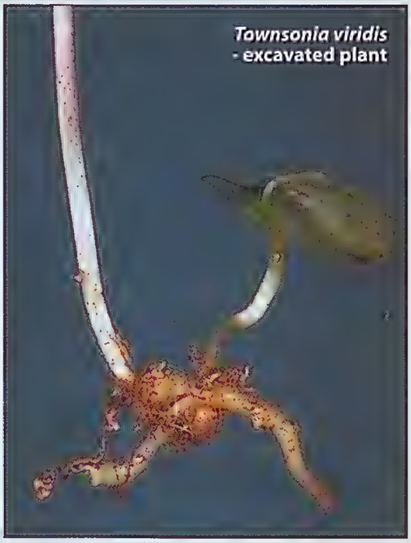


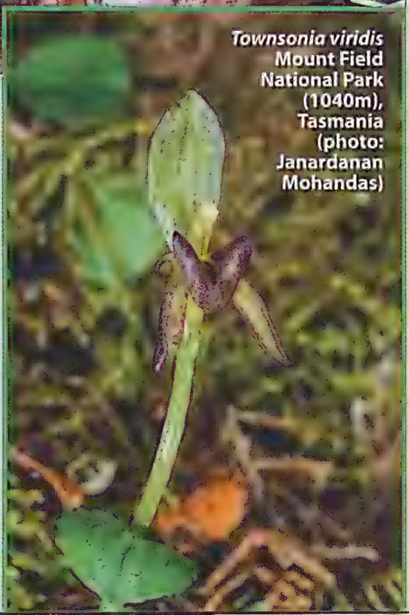
Stigmatodactylus macroglossa
Mt Koghis, New Caledonia

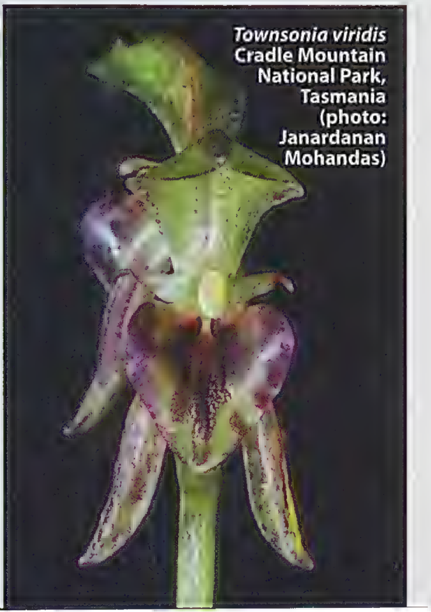
Townsonia atepala
- habitat,
Mt Mou (1219m), New Caledonia

Townsonia atepala
- plants with seed capsules,
Mt Mou, New Caledonia

Townsonia atepala
- leaves,
Mt Mou, New Caledonia


Townsonia viridis
- excavated plant


Townsonia viridis
Mount Field
National Park
(1040m),
Tasmania
(photo:
Janardanan
Mohandas)


Townsonia viridis
Cradle Mountain
National Park,
Tasmania
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Holothrix secunda and Otto Wilhelm Sonder

by Rudolf Jenny

Holothrix secunda (Thunberg) Rchb.f., *Otia Botanica Hamburgensis* 1:119.(1881)

Orchis secunda Thunberg, *Prodromus Plantarum Capensium*: 4. (1794)

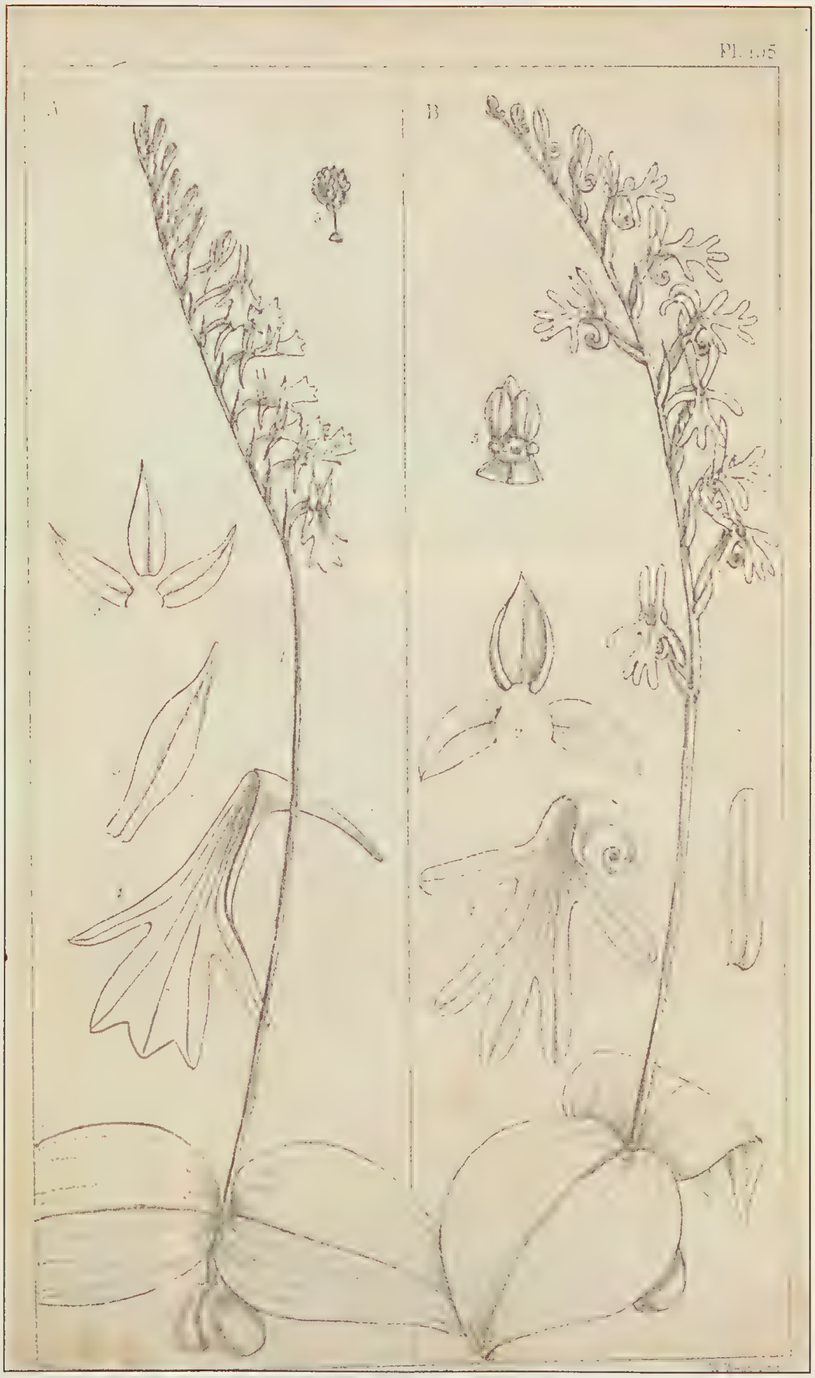
Tryphia major Sonder, *Linnaea* 19:82. (1846)

Tryphia secunda (Thunberg) Lindl., *Genera and Species of Orchidaceous Plants* :258.(1835).

Carl Peter Thunberg described *Orchis secunda* in *Prodromus Plantarum Capensium* in 1794. His description was very short and was based on material he had personally collected in South Africa. In his fundamental work *Genera and species of Orchidaceous Plants* of 1835, John Lindley first described the genus *Holothrix* with two species this was based on a nomen nudum (name without description) used by Louis Claude Richard in his PhD thesis in 1817 - the correct citation is therefore *Holothrix* L.C.Rich.ex Lindl.. The generic name *Holothrix* was conserved against a series of genera like *Monotris* Lindl., *Scopularia* Lindl, *Saccidium* Lindl., and *Tryphia* Lindl., in *Bulletin of Miscellaneous Information* in 1935, which means that *Holothrix* has priority against all those genera which could be older than *Holothrix*.

Again in *Genera and species of Orchidaceous Plants*, John Lindley in 1835 formally described the genus *Tryphia*, based on Thunberg's *Orchis secunda* from 1794. The generic name *Tryphia* had already been mentioned by Lindley in *Edwards's Botanical Register* in 1834, although as nomen nudum without any further explanation or description.

In 1847 Otto Wilhelm Sonder published in the German journal *Linnaea* a paper as "Enumeratio Orchidearum quas in Africa Australi Extratropica collegerunt C.F.Ecklon, Dr., et G.Zeyher". Under the genus *Tryphia* he listed *Tryphia secunda* Lindl. and the description of the new species *Tryphia major*. The material he used for the description had been collected by Christian Friedrich Ecklon (1795 – 1868) and Carl Ludwig Philipp Zeyer (1799 – 1858) in the Clanwilliam region of South Africa.

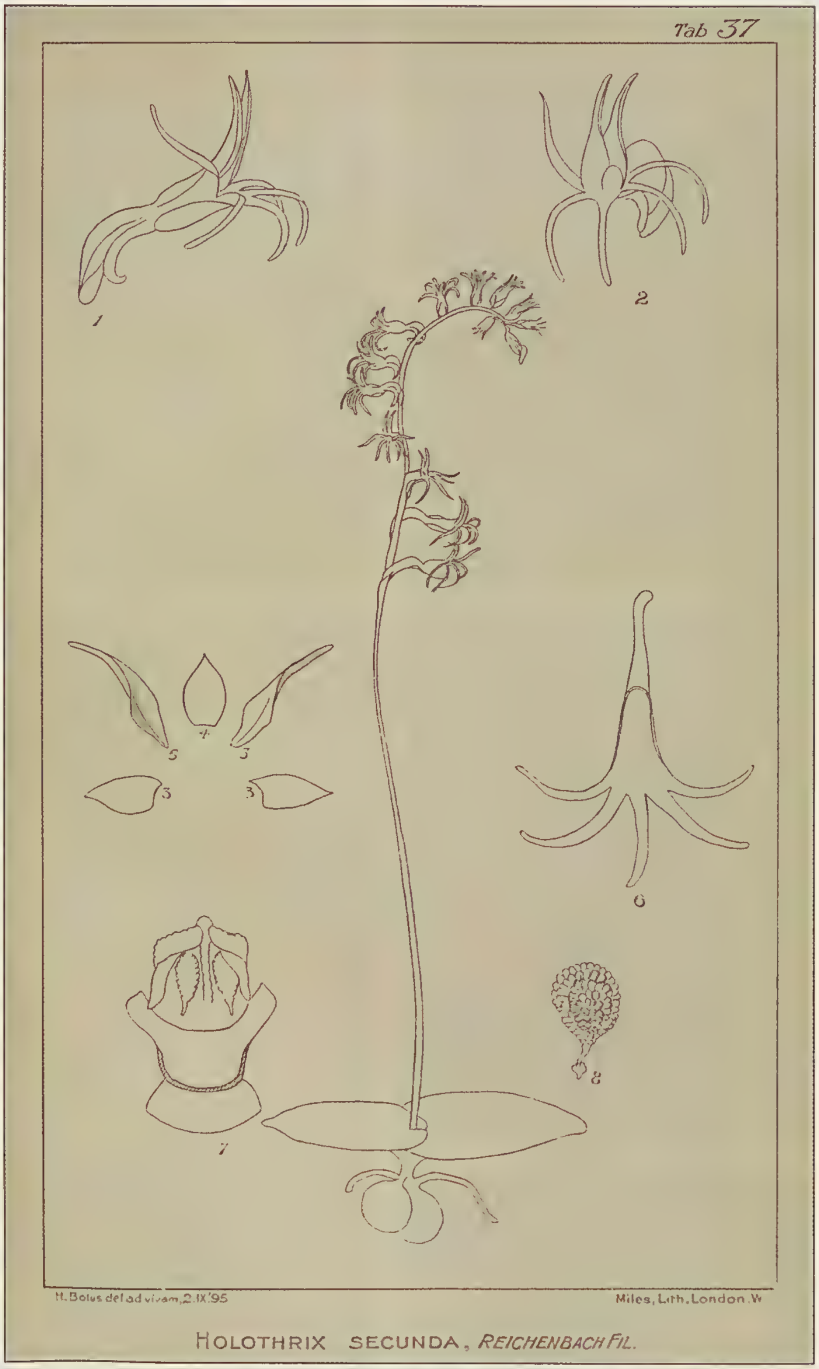


Drawing of ***Holothrix secunda*** as ***Tryphia secunda*** from *Thesaurus Capensis*, 1863

The type of *Tryphia major* is in the herbarium of the Institut für Allgemeine Botanik at Hamburg (HBG). In 1881 in *Otia Botanica Hamburgensis* Heinrich Gustav Reichenbach recombined Thunberg's *Orchis secunda* to *Holothrix secunda*.

A first illustration of *Holothrix secunda* as *Tryphia secunda* was published by William Henry Harvey (1811 – 1866) in his *Thesaurus Capensis* in 1863. A second illustration followed in 1911 in the second volume of Harry Bolus' *Icones Orchidearum Austro-Africanarum Extra-Tropicarum* as *Holothrix secunda*.

Otto Wilhelm Sonder was born on 13th June 1812 in Oldesloe, Schleswig-Holstein, Germany. Following the wish of his parents Otto decided to become a pharmacist and he started in 1828 as apprentice in the pharmacy of Biber in Hamburg. Beside the mundane days in the pharmacy Otto started to collect plants around Hamburg, laying the fundament for his later *Flora Hamburgensis*, published in 1851. Following the 3 year apprenticeship he stayed another year as assistant and left Biber in 1832. Otto went to Berlin in 1833 and passed the pharmacological state examination in 1835. During his time in Berlin he published a first botanical work about the genus *Salix*. Again following the wishes of his parents he went to Kiel in northern Germany to also get the local state examination, which was then a condition to work as pharmacist. He declined the offer of Johann Heinrich Friedrich Link (1767 – 1851), professor of botany at the University Berlin, to come to Berlin and study botany. In order to buy a pharmacy in Hamburg, Otto had to pass a third stage of the state examination - this time in Hamburg. In 1841 he started his own pharmacy, and kept this business until 1878. In Hamburg Otto came in close contact with the director of the botanical garden, Johann Georg Christian Lehmann (1792 – 1860) and especially with Senator Martin Johann Jenisch (1793 – 1857). In 1846 Otto was elected as member of the Leopoldinian-Carolinian Academy and in the same year he was given an honorary doctorate by the Philosophical Faculty of the University Königsberg.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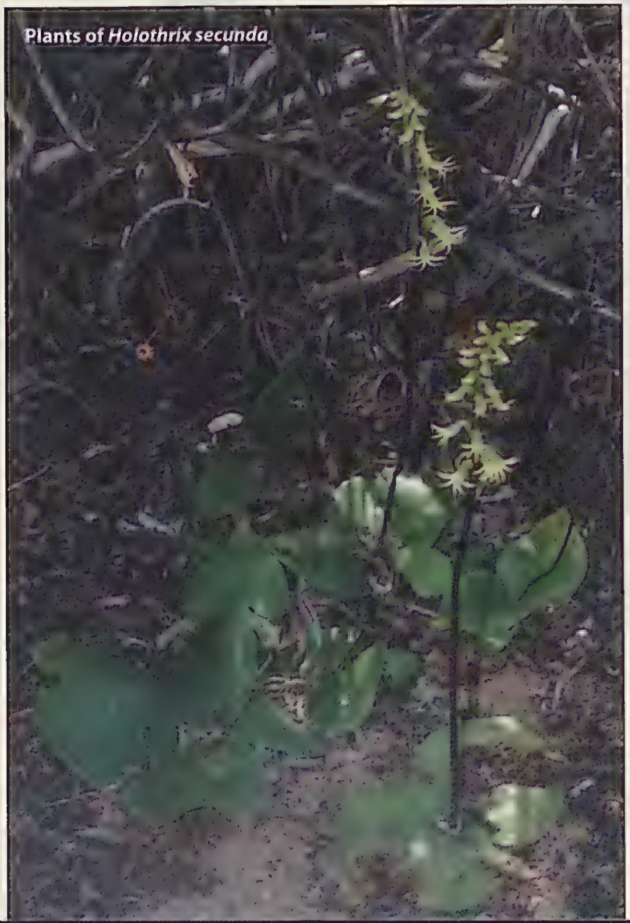
HOLOTHRIX SECUNDA, *REICHENBACH FIL.*

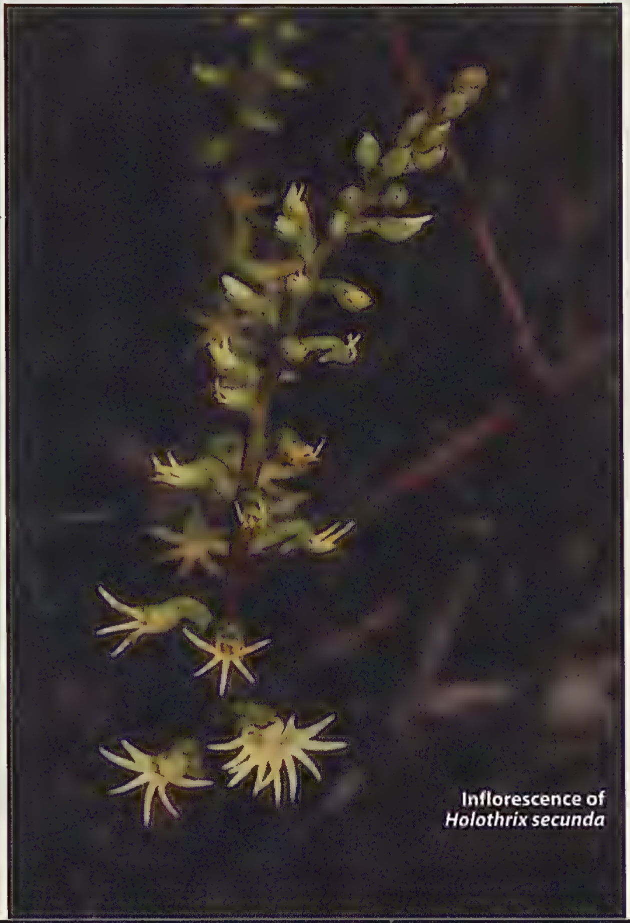
Drawing of ***Holothrix secunda*** from *Icones Orchidacearum Austro-Africanarum, 1911*

Although he never left Europe, Sonder became more and more occupied by non-European plant collections sent to him for determination, and he published several treatments of these collections. Sonder's friend William Henry Harvey asked for his help with the publication of the *Flora Capensis*; the first part of this work was published in 1860, a second followed in 1862 and a third (and the last one with participation of Sonder) in 1865. His friend Ferdinand von Mueller sent him several collections of Australian plants. Otto was especially interested in Algae, his Algae herbarium became much larger and more complete than any other in Europe. In 1845 he wrote "Nova Algarum genera et species quas in itinere ad oras occidentalies Nova Hollandiae collegit L.Preiss" and in 1871 "Die Algen des tropischen Australiens" (The Algae of tropical Australia). In "Enumeratio Orchidearum quas in Africa Australi Extratropica collegerunt C.F.Ecklon, Dr., et G.Zeyher", published in *Linnaea* in 1847, Otto described 1 new monospecific genus (*Schizochilus* with *Schizochilus zeyheri*) and 54 new species or varieties from 14 genera.

Bushmans Kloof, South Africa – the habitat of 3 different *Holothrix* species



Plants of *Holothrix secunda*



Inflorescence of *Holothrix secunda*

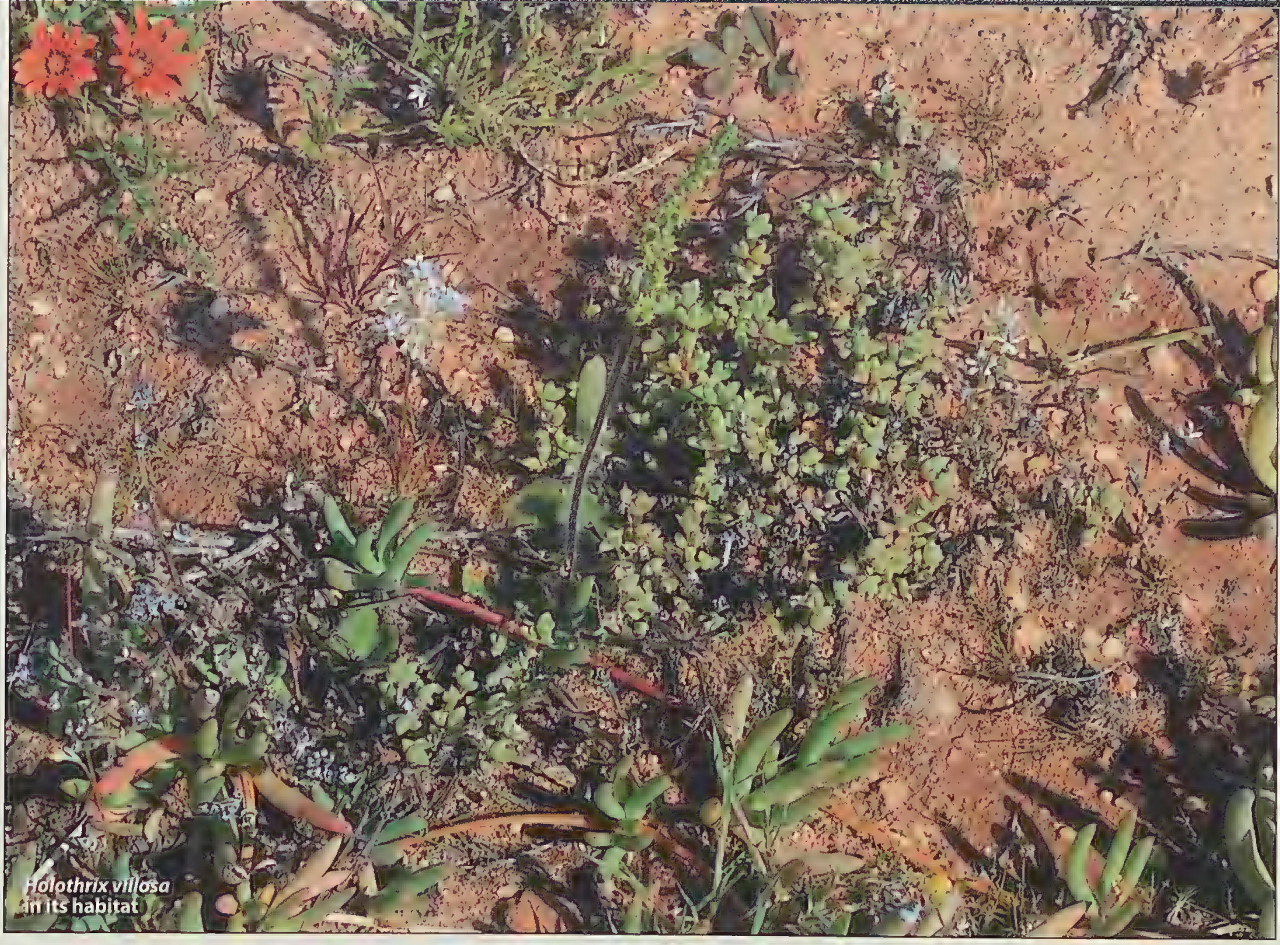
Flowers of *Holothrix secunda*

Otto was a founding member of the Botanical Society of Hamburg and member or corresponding member of a series of scientific societies. Otto Wilhelm Sonder died on 21st November 1881. The Swedish Museum of Natural History (S) purchased a greater part of Sonder's herbarium of Cape plants in 1875 (about 60,000 specimens), other parts were sold after his death and are distributed in a number of European herbaria.

Portrait of Otto Wilhelm Sonder

Plant of *Holothrix aspera*

Flowers of *Holothrix aspera*



Holothrix villosa in its habitat

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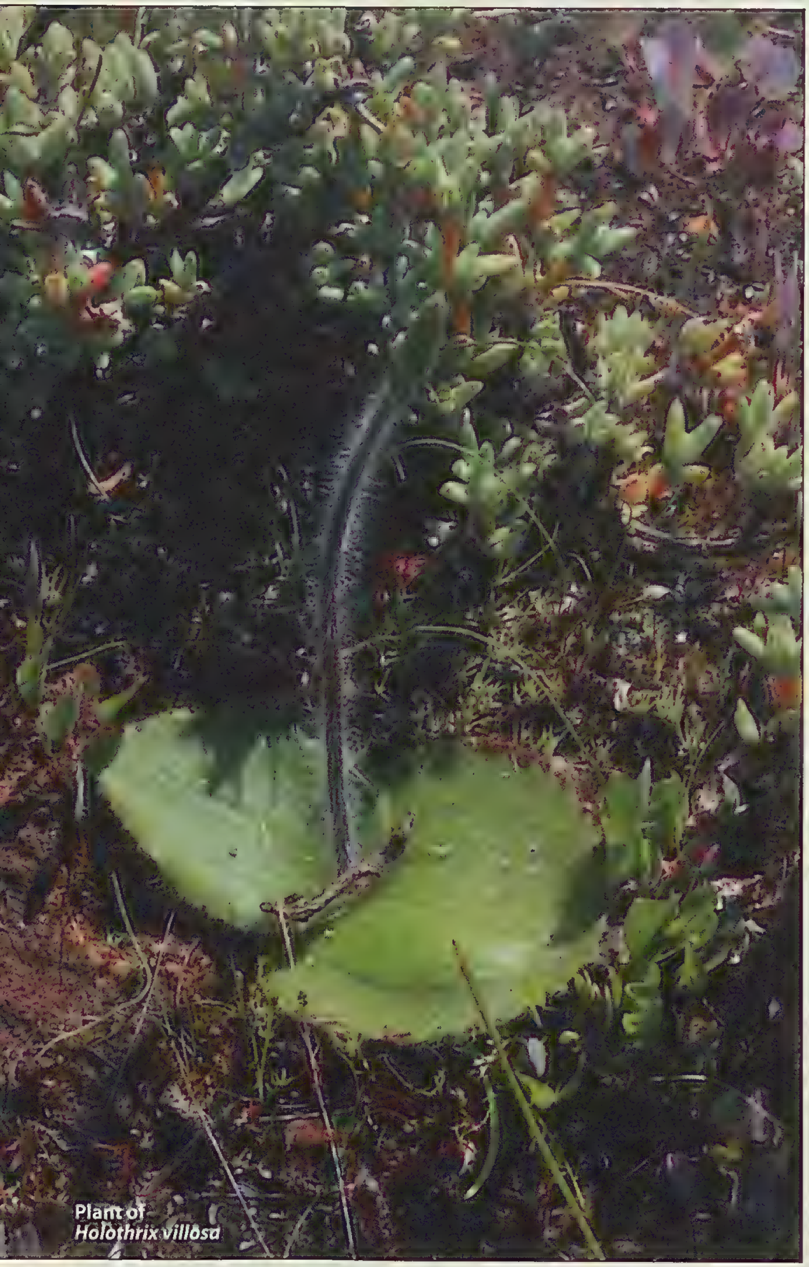
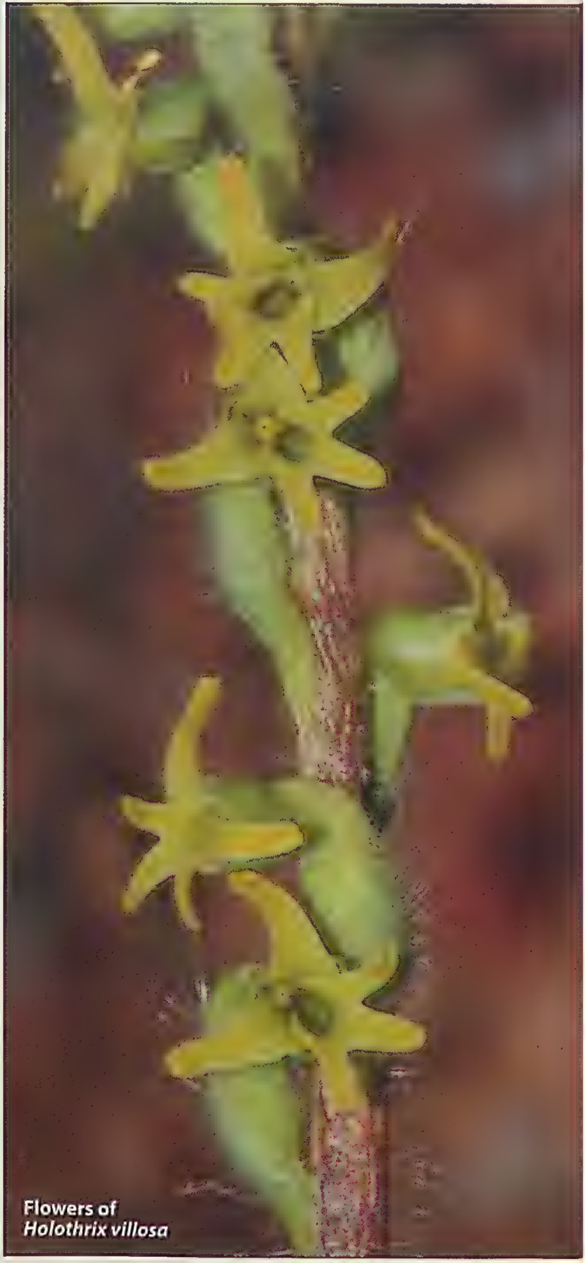


Plant of
Holothrix villosa



Flowers of
Holothrix villosa

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ORCHID SPECIES OF THE SHOALHAVEN: NSW Australia

by Alan W. Stephenson

Alan Stephenson lives in Nowra and is well placed to give the first botanical treatment of the native orchids of the Shoalhaven region. He has extended the distribution ranges of a number of uncommon and rare species, as well as discovering new taxa. This 68 page book is packed with both information and superb photography, almost exclusively taken by the author. All of the recorded orchid species native to the region are included and illustrated.

The introductory chapters discuss the area covered by this book, the structure of the orchid plants, their natural habitats, parts of an orchid flower, orchid structure and the pollination of orchids. This is followed by the main section of the book that alphabetically lists and discusses each species, with information such as Common Names, Recent Synonyms, Flowering Time in the wild, plus a brief description of the plant, flowers and preferred habitat. There are many terrestrial species fully covered as well as a number of epiphytic and lithophytic genera that are found in the area.

The quality of the printing and colour reproductions are sparking. This is a wonderful field guide that will aid even the most novice naturalist or native orchid enthusiast and confidently assist them in identifying examples they encounter in the field. It represents excellent value, as it also covers many species found naturally along the East Coast of New South Wales.

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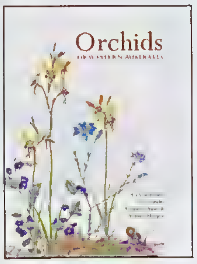
ORCHIDS OF WESTERN AUSTRALIA

by Andrew Brown, Pat Dundas, Kingsley Dixon & Stephen Hopper



Written by three of Western Australia's most prominent orchidologists and featuring over 200 full-page, colour illustrations by renowned botanical artist Pat Dundas, *Orchids of Western Australia* is the first modern text cataloguing all 409 known species.

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by Mark A. Clements

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The Allure of Orchids features an essay by internationally recognised orchid expert Mark Clements, accompanied by a portfolio of illustrations, both historical and modern, of this alluring species. In it you will find works by around 25 artists, including the extraordinarily detailed lithographs of early botanical illustrator Ferdinand Bower, Ellis Rowan's beautiful paintings, the delicate watercolours of Margaret Cochrane Scott, and many more.

The Allure of Orchids is divided into two parts; Terrestrial or ground orchids and Epiphytic or tree dwelling species. Clements says, "These illustrations can be enjoyed simply as works of art and part of our rich and colourful Australian illustrative heritage. But, significantly, they are also part of the scientific record of this country, particularly during the early exploration of the continent."

Interestingly, a lot of the old and traditional Latin botanical names have been used in this work. The author makes a significant number of anecdotal notes and comments throughout the book, to keep the reader fully informed. It is a "must have" book for those interested in Australian orchids and historical botanical art.

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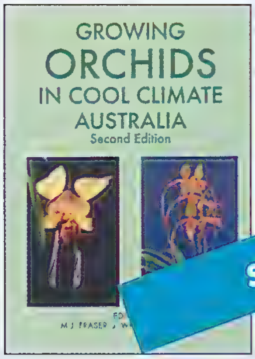

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(Second Edition, 2013)

Editors: Fraser, M.J., Wright, J., & Ferris, W. 2013

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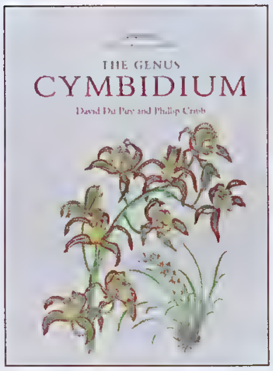

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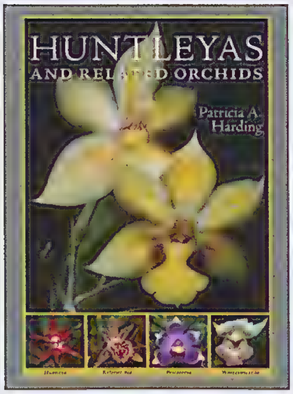

HUNTLEYAS AND RELATED ORCHIDS

by Patricia A. Harding

Revered by avid orchid collectors for its delightful, star-shaped flowers, *Huntleya* is a small group of orchids found low in the forest. *Huntleya* is a small orchid genus that includes fourteen species. They occur in wet cloud forests at medium altitudes of Guatemala, Costa Rica, South America down to Bolivia. The type species *Huntleya meleagris* also occurs in Trinidad. Besides their striking colours — from deep blue to waxy red, royal purple to almost black — flowers of this group are known for their distinctive shapes, patterns, and textures. As appealing as these lovely tropical orchids are, their identification has been confused since the first species was described in the mid-1800s. Recent DNA studies have led to a clearer understanding of relationships and, as a result of this clarity, it is now possible to sort out the taxonomic problems and identify the characteristics that set species apart. In this first book devoted to the *Huntleya* alliance, author Patricia Harding presents evidence from the scientific literature, other growers, and her own experience that will enable orchid enthusiasts everywhere to identify their plants and grow them successfully. Patricia A. Harding is an accredited American Orchid Society judge who has been growing and photographing orchids for three decades.

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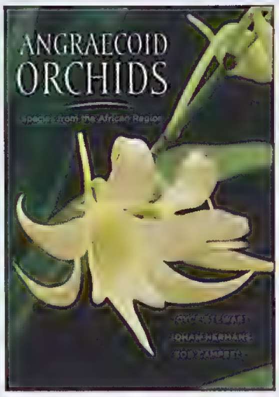

ANGRAECOID ORCHIDS:

Species from the African Region

by Joyce Stewart, Johan Hermans, and Bob Campbell

These so-called 'Jewels of Africa' with their sparkling flowers, distinctive growth habit and floriferous nature are much prized and this account, the first to include the Angraecoid orchids of both Africa and Madagascar, is long awaited. It brings together, in a single volume, descriptions of all 690 species in this intriguing group of orchids and will be the essential reference for all Angraecoid orchid enthusiasts for years to come. Including such horticulturally important genera as *Angraecum*, *Aeranthes*, *Aerangis* and *Jumellea*. Stewart, Herman and Campbell have all spent time in various parts of eastern and southern Africa and precise ecological information relating to habitat, altitude preferences and flowering season of individual plants will be particularly helpful to growers. The diagnostic features of each genus are illustrated and over half the species are accompanied by exquisite photographs taken in both wild habitats and in cultivation.

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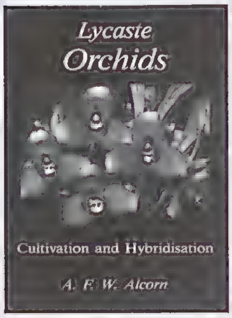

LYCASTE ORCHIDS -

Cultivation and Hybridisation

by A.F.W. Alcorn

Lycaste orchids are easy to grow, and they produce flowers that range from the beautiful to the bizarre. No book previously has provided detailed cultural requirements of the Lycaste, and this book should fill that gap, and encourage new growers to take up the cultivation of this beautiful genus. A section on hybridising contains valuable information on inheritance and genetics that will benefit any hybridiser, not just the grower of Lycastes, as well as helpful hints on how to avoid pitfalls in your hybridising program. Michael Hallett, a friend of Fred Alcorn for a number of years, co-wrote this book with Fred and has completed it posthumously. He has a background in genetics, research and botany, and a passion for plants, especially orchids.

237 pages. Colour and B&W.

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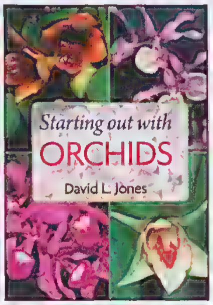

STARTING OUT WITH ORCHIDS

by David L. Jones

David Jones is arguably one of Australia's most prolific, precise and respected botanical and horticultural authors. The book is divided in two parts. Part One begins with the cultivation chapters, covering Easy Orchids for Beginners, General Cultivation Requirements, Growing Epiphytic Orchids, Growing Terrestrial Orchids, Orchid Pests and Diseases, Housing Your Orchids and Propagating Your Orchids. The information contained within these pages alone is required reading for all beginners through to experienced orchid growers. The text is very easy to read and understand with numerous sound cultivation tips and treatments discussed. There are many excellent and clear line illustrations that help describe terms or highlight diagnostic features. There are over 250 colour photographs.

Part Two discusses the orchids themselves with concise information on each species. They are grouped primarily according to climatic requirements, starting with cool growing orchids progressing to the warm growers, in alphabetical sequence first with terrestrial genera, followed by the epiphytes. Both Australian and exotic species are treated together. For each entry there is specific detailed information on each species, as well as a simple table giving the basic cultivation needs and flowering season. A glossary is also included to explain unfamiliar terms.

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Can We Please Get It Right?

(with some pretext of pronunciation)

by Alan W. Stephenson

On occasions, with one notable exception, our other two national orchid magazines manage to spell the names of our native and exotic species incorrectly, when they of all entities should ensure such things are correct. This applies only to spelling as I will not mention nomenclature, as this is another diversion applicable to those who are (usually scientific or well educated), with a nose out of joint and a preference to live in the 19th century and not recognise Australian scientific progress.

I was fortunate to learn from instructive, thoughtful and common-sense people in my early orchid days and this awareness grew, along with my interest and involvement with orchids.

Some of the terminology includes such words as "canes" instead of pseudobulbs, capsules instead of "pods", "spikes" instead of inflorescences, "Rock Lily" instead of at least The Sydney Rock Orchid or better, *Thelychiton speciosus* (syn. *Dendrobium speciosum*). However, despite being a very poor typist I manage to spell quite well, due in part to this being the only subject with which I did well at school and in more recent years to prevent the embarrassment of regular self or editorial corrections.

When I write an orchid name, or anything else which is not in the spell-checker of my computer (as some are), I always add it to the dictionary on that facility as I will not see that red highlighting again. This was highlighted by recent ABC television regarding bushfire alerts to various towns along the Princes Highway, where to my horror a main word was spelled "Princess". This is also a regular feature of my local television and radio stations, which prompted this outpouring.

A recent article in another Australian orchid magazine featured three native orchids and two were spelled incorrectly. These were *Diuris* auera (*aurea*), *Glossodia major* (correct) and *Thelymitra* ixoides (*ixioides*). Please note the highlights are limited to the incorrectly spelled species.

Also, occasionally corrections are made in a following magazine issue, but my concern is for the mistake not to be made as most are easily corrected. Get it right in the first place!

One final matter which annoys me more than incorrect spelling is incorrect pronunciation. I also learned this early in my orchid life and it has been yet another source of irritation as many who take this path should know better. I say this by being regularly bombarded with such gems as *Sarcochilus* and *Chiloglottis*, when these people who are involved in the plant industry should know better as we, (i.e. most of us) are aware that "Ch" is pronounced as "k". Another which can be mispronounced is Cattle-aya, when correctly it should be *Cattleya* (Cat-lee-yah).

One regular mistake made by those who don't know and don't realise they are incorrect is the use of *Cymbidium* "caniculatum" instead of *Cymbidium canaliculatum*. Some continue to use the latter term despite being corrected and I can only assume they are happy in their ignorance and don't really care they are driving the rest of us crazy.

Another feature is the use of common names, which can vary from country to country, state to state and even areas within a state. I avoid these as much as possible and several years ago this fact was highlighted by the presenter of a long-ceased garden show. I wrote a letter to this person regarding his use of "Rock Lily" and this included the use of common names. One of my most disliked names is "Spider Orchid". And when a person uses that term to describe an orchid, I ask to which "Spider Orchid" that person might be referring and I then mention, *Brassia verrucosa* or a genus of native terrestrials or a native epiphyte and I go on to describe the differences to the astonishment of the questioner.

One memorable episode was during a personal submission to the NSW Planning and Assessment Commission (PAC). At the beginning of my address I said I would only use the correct botanical name for the featured orchid, which was *Genoplesium baueri*. One person in the gallery who was in favour of the road which would have destroyed many plants asked me (in an accusatory manner) why I would do this. I responded by first saying (in a similar manner) the plant had several common names, which were Bauer's Midge Orchid, Pink Midge Orchid, Brittle Midge Orchid and Yellow Midge Orchid. I then asked him, if he had a common name or nickname and if so how many true or common names he accepted when his official delivered mail was received each day. He then sat down and failed to say another word for the remainder of the session.

In my normal life I receive several newsletters from orchid societies with which I have an association. One from the outer Sydney area is possibly the worst offender I have encountered as far as poor spelling and writing of orchid names. It is not uncommon to see on the results page, species written with capital letters and not only to begin the name but the entire plant name and the spelling looks like it is the product of a newcomer to orchids. I fail to understand how an experienced person as an editor of the newsletter could make this number of errors. So please read your Newsletter more carefully as in the digital age it almost certainly travels further than the local area.

At local orchid gatherings I occasionally try to explain this to those who may not know but may want to learn. I believe the more a person learns about a chosen hobby, the greater the level of appreciation and enjoyment. ■

Alan W. Stephenson
Nowra, NSW
Email: affine@tpg.com.au

2018 ORCHID EVENTS – *What's on!*

June 23-24 Mingara Orchid Fair & Show
– Mingara, NSW

July 14-15 Tinonee Orchids Show and Workshop
– Tinonee, NSW

July 20-22 Australian Orchid Conference
– Windsor, NSW

July 20-22 North Shore Orchid Society
– Gordon Shopping Centre, NSW

July 29 Hills District Orchids
– Winter Open Day
– Northmead, NSW

August 4-5 Warringal Orchid Society
– Winter Show
– St. Sava Community Centre, Greensborough, VIC

August 17-19 St. Ives Orchid Fair
– St. Ives Showground, NSW

August 24-26 Melbourne Orchid Spectacular
– Boxhall Pavillion (KCC Park), Skye, VIC

September 30 Hills District Orchids
– Spring Open Day
– Northmead, NSW

October 6-7 Warringal Orchid Society
– Spring Show
– St. Sava Community Centre, Greensborough, VIC

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TINONEE ORCHIDS

Come & see us at your local show in 2018

2018 DIARY

We will be at the following shows and Orchid events.

June 23–24 ....Mingara Orchid Fair & Show

July 14–15 ....TINONEE ORCHIDS WORKSHOP, OPEN DAY & SHOW

July 20–22 ....Australian Orchid Conference – Windsor

July 29 ....Hills District Orchids – Winter Open Day

August 3–5 ....National Orchid Extravaganza – Dural

August 17–19 ....St. Ives Orchid Fair

September 8 ....Bellingen Plant Fair – Bellingen

September 22–23 ..Plant Lovers Fair – Kariong

September 30 ....Hills District Orchids – Spring Open Day

October 12–14 ......Southern Orchid Spectacular – Cronulla

November 3–4 ....Tweed District Orchid Fair – Tweed Heads

December 2 ....Hills District Orchids – Summer Open Day

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